No Jacket
435
MF Class
NS 1.22/3:991

Academic Science and Engineering: R&D Expenditures, Fiscal Year 1991

396

Surveys of Science Resources Series
National Science Foundation Detailed Statistical Tables
NSF 93-308

NF

Academic Science and Engineering: R&D Expenditures, Fiscal Year 1991

Project Officer: M. Marge Machen

Surveys of Science Resources Series
National Science Foundation Detailed Statistical Tables

NSF 93-308

I

Suggested Citation

National Science Foundation, ***Academic Science and Engineering: R&D Expenditures, Fiscal Year 1991,*** Detailed Statistical Tables, NSF 93-308, (Washington DC, 1993).

Availability of Publications

Single copies are available free of charge from the Division of Science Resources Studies, National Science Foundation, Washington DC 20550. If you are a user of electronic mail and have access to either BITNET or Internet, you may order publications electronically. BITNET users should address request to pubs@nsf. Internet users should send requests to pubs@nsf.gov. In your request, include the NSF publication number and title, number of copies, your name, and a complete mailing address. Printed publications may also be ordered by fax (703/644-4278). Publications should be received within three weeks after receipt of request. See roman numeral page three for availability of science and technology data on the Science and Technology Information System (STIS).

NSF'S Telephonic Device for the Deaf: (202) 357-7492

Contributors

Data collection, preparation, and tabulation were performed by Quantum Research Corporation for the National Science Foundation. The Project Officer of this report was M. Marge Machen.

STIS

The Science & Technology Information System at the National Science Foundation

What is STIS?

STIS is an electronic dissemination system that provides fast, easy access to National Science Foundation (NSF) publications. There is no cost to you except for possible long-distance phone charges. The service is available 24 hours a day, except for brief weekly maintenance periods.

What Publications are Available?

Publications currently available include:

- The *NSF Bulletin*
- Program announcements and "Dear Colleague" letters
- General publications and reports
- Press releases
- NSF organization charts and phone books
- NSF vacancy announcements
- Award abstracts (1989—now)

Our goal is for all printed publications to be available electronically.

Access Methods

There are many ways to access STIS. Choose the method that meets your needs and the communication facilities you have available.

Electronic Documents Via E-Mail. If you have access to Internet or BITNET e-mail, you can send a specially formatted message, and the document you request will be automatically returned to you via e-mail.

Anonymous FTP. Internet users who are familiar with this file transfer method can quickly and easily transfer STIS documents to their local system for browsing and printing.

On-Line STIS. If you have a VT100 emulator and an Internet connection or a modem, you can log on to the on-line system. The on-line system features full-text search and retrieval software to help you locate the documents and award abstracts that are of interest to you. Once you locate a document, you can browse through it on-line, or download it using the Kermit protocol, or request that it be mailed to you.

Direct E-Mail. You can request that STIS keep you informed, via e-mail, of all new documents on STIS. You can elect to get either a summary or the full text of new documents.

Internet Gopher and WAIS. If your campus has access to these Internet information resources, you can use your local client software to search and download NSF publications. If you have the capability, it is the easiest way to access STIS.

Getting Started With Documents Via E-Mail

Send a message to **stisserv@nsf.gov** (Internet) or **stisserv@NSF** (BITNET). The *text* of the message should be as follows (the Subject line is ignored):

get index

You will receive a list of all the documents on STIS and instructions for retrieving them. Please note that all requests for electronic documents should be sent to **stisserv**, as shown above. Requests for *printed* publications should be sent to *pubs@nsf.gov* (Internet) or *pubs@NSF* (BITNET).

Getting Started with Anonymous FTP

FTP to *stis.nsf.gov*. Enter *anonymous* for the username, and your e-mail address for the password. Retrieve the file *index*. This contains a list of the files available on STIS and additional instructions.

Getting Started with the On-Line System

If you are on the Internet: *telnet stis.nsf.gov*. At the login prompt, enter *public*.

If you are dialing in with a modem: Choose 1200, 2400, or 9600 baud, 7-E-1. Dial 202-357-0359 or 202-357-0360. When connected, press Enter. At the login prompt, enter *public*.

Getting Started with Direct E-Mail

Send an e-mail message to **stisserv@nsf.gov** (Internet) or **stisserv@NSF** (BITNET). Put the following in the text:

get stisdirm

You will receive instructions for this service.

Getting Started with Gopher and WAIS

The NSF Gopher server is on port 70 of *stis.nsf.gov*. The WAIS server is also on *stis.nsf.gov*. You can get the ".src" file from the "Directory of Servers" at quake.think.com. For more information, contact your local computer support organization.

For More Information

For additional assistance contact:

E-mail: *stis-request@nsf.gov* (Internet)
stis-req@NSF (BITNET)
Phone: 202-357-7555 (voice mail)
TDD: 202-357-7492

NSF 91-10 Revised 10/25/92

CONTENTS

Page

General Notes vii

Section:

A. Technical Notes 1

Technical Tables
Tables

A-1a. Response rates for the Academic Science and Engineering R&D Expenditures Survey at all institutions, by type of institution: FY 1991 9

A-1b. Response rates for the Academic Science and Engineering R&D Expenditures Survey, by sampling strata and highest degree granted: FY 1991 10

A-2. Imputed and/or estimated amount for the Academic Science and Engineering R&D Expenditures Survey, by type of institution: FY 1991 11

A-3a. Imputed and/or estimated amount for the Academic Science and Engineering R&D Expenditures Survey, by science and engineering field: FY 1991 12

A-3b. Imputed and/or estimated amount of federally financed Academic Science and Engineering R&D Expenditures, by science and engineering field: FY 1991 13

A-4. Imputed and/or estimated amount for the Academic Science and Engineering R&D Expenditures Survey, by source of funds: FY 1991 14

A-5. Standard errors of the estimates (SE) and coefficients of variation (CV) for the Academic Science and Engineering R&D Expenditures Survey, by science and engineering field: FY 1991 15

B. Detailed Statistical Tables 17

C. University-Administered Federally Funded Research and Development Centers: FY 1991 183

D. Survey Instruments 185

GENERAL NOTES

The data presented in this report were compiled from the National Science Foundation's (NSF's) fiscal year (FY) 1991 Survey of Scientific and Engineering Expenditures at Universities and Colleges. They refer to science and engineering (S&E) expenditures for separately budgeted research and development (R&D). Terms used in institutional accounting procedures are incorporated throughout the tables.

The term "separately budgeted R&D expenditures" includes all funds expended for activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution. "Expenditures" are funds actually spent by an institution during its fiscal year. "Separately budgeted R&D equipment purchased from current funds" includes all research equipment purchased under sponsored research project awards.

"Federally funded research and development centers" (FFRDCs) are R&D-performing organizations that range from the traditional contractor-owned/contractor-operated or Government-owned/contractor-operated organizational structures to various degrees of contractor/Government control and ownership. FFRDCs are formed to achieve particular Federal R&D objectives that cannot be met as effectively by existing organizations.

The terms "imputation" and "imputed data" refer to the computerized process by which NSF develops estimates of data when institutions do not furnish the information upon request. Using this process, estimates are developed that are based primarily on key data items reported in prior years' surveys when available. When not available, estimates are based on figures derived from data of respondent institutions that have similar characteristics, including highest degree granted and type of institutional control (public or private). In this publication, the letter "i" is used to identify imputed data and the letter "e" is used when respondent institutions indicated that their data were estimated, or when data required slight mathematical adjustments.

Data presented in trend tables are assembled from the most recently completed survey cycle. Since prior years' data are reviewed for consistency with current year responses and, when necessary, revised in consultation with institutional respondents, references to prior years' data should be restricted to this document.

Requests for additional information concerning the survey findings for the current or prior surveys should by directed to Ms. Marge Machen at the following address:

Science and Engineering Activities Program
Room L-609
Division of Science Resources Studies
National Science Foundation
Washington, DC 20550

(202) 634-4673

SECTION A. TECHNICAL NOTES

Scope of the Survey

Data for the National Science Foundation's (NSF's) fiscal year (FY) 1991 report on research and development (R&D) expenditures were collected from a sample of 459 institutions of higher education in the United States and outlying areas. Those institutions were selected from the universe of 595 schools that grant a graduate science or engineering (S&E) degree and/or perform activities for which at least $50,000 has been funded from separately budgeted R&D expenditures. The sample population includes all doctorate-granting institutions, all historically black colleges and universities (HBCUs) with R&D expenditures, and a random sample of all other institutions.

In addition, the survey includes 19 federally funded research and development centers (FFRDCs). To qualify, an FFRDC must be engaged in basic or applied research, development, or management of R&D activities, and the results of these activities must be directly monitored by the Federal Government--usually a single agency--in a relationship expected to be maintained on a long-term basis. The center must be operated, managed, and administered by either a university or consortium of universities as an autonomous organization or as an identifiable separate operating unit of its parent institution. Finally, 70 percent or more of the center's financial support must be received from the Federal Government.

Although the same survey form (NSF Form 411) is used to collect data from both academic institutions and FFRDCs, the resulting data are presented separately in this report. The survey population was reviewed prior to mailing the questionnaires to ensure that each institutional classification is accurate. Characteristics of the schools were reviewed before and during the course of the survey to determine if changes have occurred (i.e., in highest degree granted or in terms of school openings, closings, or mergers). Names of institutions newly added to the *HEP 1992 Higher Education Directory* were reviewed to determine their eligibility for inclusion in this survey.[1]

Survey Instrument

Most major R&D performers have incorporated into their recordkeeping systems the data that are essential to complete this survey, thereby ensuring a consistent format from one year to the next. Such consistency yields the most useful statistics for time series. As a rule, information to complete this questionnaire is found within the institutions' year-end accounting records.

---

1 Higher Education Publications, Inc., Falls Church, VA, 1992.

The survey questionnaire consists of three main items:

Item 1 is a request that institutions report their total current expenditures for separately budgeted S&E R&D by source of funds and indicate the percentage of the total and percentage of the federally financed portion that are considered basic research. Care should be observed when interpreting data on source of funds; for example, industry R&D support is limited to grants and contracts for R&D activities from profit-making organizations, and the total reported excludes research funded through unrestricted accounts and from corporate foundations, endowments, and fellowships to students. An increasing number of institutions have linkages with industry and foundations via subcontracts, which complicates the identification of funding source. In addition, institutional policy may determine whether unrestricted state support is reported as state or as institutional funding.

Item 2 is a request for total and federally financed current fund expenditures for separately budgeted R&D activities by detailed S&E fields. Major fields remain unchanged from the FY 1990 questionnaire. When interpreting these data at the detailed discipline level, users should keep in mind that there is considerable interdisciplinary activity and/or overlap among subdisciplines.

Item 3 is a request that institutions specify the portion of total expenditures and the portion of federally financed expenditures reported in Items 1 and 2 that were used for the purchase of research equipment out of current funds. This includes all research equipment purchased under sponsored research project awards and disbursed in the same detailed disciplines as in Item 2. These data are of special interest to Federal and institutional policymakers in determining current funding levels for scientific research instrumentation.

Response Rate

The FY 1991 survey questionnaires were mailed in October 1991. Every effort was made to maintain close contact with respondents in order to preserve both consistency and continuity in the resultant data. Questionnaires were carefully examined upon receipt for completeness. Computerized facsimiles of the survey data were then prepared for each institution, comparing the current and 2 previous years' data and noting any substantive disparities. These facsimiles were mailed to the respondents so that they could provide revisions before final processing and tabulation of the data took place.

Respondents were asked to explain significant discrepancies between current and prior-year reporting patterns previously verified as correct. They were encouraged to correct prior years' data if anomalies were identified. When

updated or amended figures covering past years were submitted, trend data were correspondingly changed by NSF. Similarly, if a respondent institution underwent an organizational change, such as a merger, NSF incorporated the effects of such changes into prior years' data.

By the survey closing date in late June, forms had been received from 446 universities and colleges out of a sample population of 459, resulting in a 97.2 percent response rate. Responses were received from 98 percent of all doctorate-granting institutions, where more than 98 percent of the R&D expenditures in S&E fields was disbursed. Also, forms were received from all 19 FFRDCs. Tables A-1a and A-1b display a detailed breakdown of the response rates by degree granted and by sampling stratum (sampling strata are defined under **Sampling, Weighting, and Standard Errors of the Estimates**).

National Total and Imputation

To provide a national estimate for universities and colleges of R&D expenditures for FY 1991 it was necessary to implement three statistical procedures. First, data were estimated for the approximately 3 percent of the sample population that had not responded by the closing date of the survey by "imputation," a technique used consistently since FY 1976. Second, data were either imputed or estimated for universities and colleges that submitted only partial responses. The combined imputed and/or estimated amounts, prior to weighting, totaled $150 million for R&D expenditures at universities and colleges. Third, the sample total was weighted to compensate for those universities and colleges that were in the survey universe but not in the survey sample (this procedure is described under **Sampling, Weighting, and Standard Errors of the Estimates**). This process led to an inflation of $140 million in the national total of R&D expenditures at universities and colleges for FY 1991 to equal $17,620 million, as shown in table A-2 (the weighted imputed or estimated amount is $151 million, as noted in table A-2).

Tables A-3a and A-3b present a breakdown of both the imputed and/or estimated amounts, and the amount of the weighted inflator by broad S&E fields. The dollar amount imputed and/or estimated is displayed along with the percentage it represents of the national estimate for universities and colleges in that particular field. Also given is the amount of the weighted inflator for that field. The amount imputed or estimated and the amount of the weighted inflator are similarly broken down by source of funds in table A-4.

A significant number of surveyed institutions have been responding only intermittently in past years, providing data one year, not responding for one or more subsequent years, and then providing data again. For the years in which no

response was received, data have been imputed as previously described. Although the imputation algorithm accurately reflects national trends, it cannot account for reporting anomalies at individual institutions. For this reason, a separate backcasting of previous years' data was performed, following current-year imputation.

For each institution, formerly imputed key variables for Items 1 to 3 were compared with subsequent submissions to determine whether the imputed data accurately represent the growth/decline patterns shown by reported data. Re-estimation was applied when the imputed data were not consistent with reported data. If data were reported for fiscal years 1987 and 1991 but not for the intervening years, for example, the difference between the reported figures for each item total was calculated and evenly distributed across the intervening (1988-90) years. The new figures were spread across disciplines (Items 2 and 3) or sources of support (Item 1) on the basis of the most recent reporting pattern. These procedures resulted in much more consistent reporting trends for individual institutions but had little effect upon aggregate figures reflecting national totals.

Data Anomalies

Aggregate academic expenditure trend data are generally consistent from year to year, although data for individual institutions may vary considerably. Data anomalies may reflect true increases or decreases in expenditures or may be the result of changes in reporting methodology.

Sampling, Weighting, and Standard Errors of the Estimates

Since FY 1988, the year of the last full population survey, the NSF has performed surveys on a constant sample of 459 to 461 institutions. During the FY 1989 survey cycle, the survey design separated universities and colleges from FFRDCs, and this survey design was continued in the FY 1990 and 1991 cycles. In turn, universities and colleges have been divided into the following four strata (three certainty strata and one probability stratum):

(1) **A certainty stratum of doctorate-granting institutions.** This stratum contains 305 universities and colleges that grant doctorate degrees in S&E fields. Excluded from this stratum are all doctorate-granting HBCUs and university system campuses.

(2) **A certainty stratum of HBCUs.** This stratum includes all 70 HBCUs (including those that are doctorate-granting institutions or university system campuses).

(3) **A certainty stratum of university system campuses.** This stratum includes 36 "university-system campuses"; each sample entry is the aggregation of all campuses that make up a university system. Note that no HBCUs are included in this stratum even if they are university-system campuses.

(4) **A probability stratum of institutions that grant degrees at the master's level or below.** This stratum includes 48 master's or bachelor's degree-granting institutions and institutions that offer no S&E degrees at any degree level, out of a survey stratum universe of 184. Note that none of the universities or colleges included in this stratum are either HBCUs or university-system campuses. This stratum had a sampling ratio of 0.26.

The data in this report are weighted to represent national-level R&D expenditures for universities and colleges (as mentioned previously under **National Total and Imputation**). The sample data, after imputation and estimation, were inflated to produce universe estimates by weighting the individual questionnaire data values by the inverse of the sampling ratio. Thus, in aggregating data for institutions from the probability stratum for tabulation purposes, each datum value was weighted by the inverse of the sampling ratio.

Estimates derived for institutions in the probability stratum were based on a sample, and the relative standard error (coefficient of variation) of an estimate was then obtained by dividing the standard error by the estimate itself, expressed as a percentage of the estimate.

The standard errors and coefficients of variation for each major S&E field are shown in table A-5. For example, for total academic R&D expenditures of $17.6 billion, the standard error of the estimate is $49.8 million at the 95-percent confidence level, with a coefficient of variation of ±0.3 percent. Similarly, for the estimate of $10.2 billion in federally financed expenditures, the 95-percent confidence limits are plus or minus $31.9 million, with a coefficient of variation of ±0.3 percent.

Data Availability and Distribution

Data published in this report are also available in machine-readable form on magnetic tapes. A multiyear data tape is available that contains data for FY 1972 through FY 1991; single-year tapes may also be purchased for any of these years.

Information on tape formats and years available, with prices and instructions for ordering, are contained in the current *Supplemental User Guide to Data Tapes*, which is updated each year. A general *Guide to the National Science Foundation's Surveys of Academic Science and Engineering* is also available. Both user guides may be obtained by contacting Ms. Marge Machen at the following address and telephone number:

Science and Engineering Activities Program
Room L-609
Division of Science Resources Studies
National Science Foundation
Washington, DC 20550

(202) 634-4673

Selected data items for individual doctorate-granting, master's-granting, and historically black institutions are available on computer-generated Institutional Profiles, which consist of data not only from this survey but also from NSF's other two academic S&E surveys: Federal Support to Universities and Colleges, and Graduate Enrollment and Support. Since the R&D Expenditures Survey is a sample data collection effort, not all master's-granting institutions' data appear on every profile. Institutional Profiles for any institution or limited group of institutions may be ordered by contacting Mr. Richard Bennof at the following address and telephone number:

Science and Engineering Activities Program
Room L-609
Division of Science Resources Studies
National Science Foundation
Washington, DC 20550

(202) 634-4673

The CASPAR (Computer-Aided Science Policy Analysis and Research) database system is an easy-to-use tool for retrieval and analysis of statistical data on academic S&E resources. CASPAR provides the analyst with an extensive and growing data library with multiyear statistics on the state of higher education in general and on S&E resources specifically. This data library is based on a set of standardized institutional and field of science definitions across the multiple sources used to develop the database. The CASPAR program includes built-in help capabilities to facilitate the use and interpretation of the data.

CASPAR data are drawn from a number of sources. All are available for individual institutions, by State, and at the national level. Longitudinal data from surveys of universities and colleges conducted by the NSF Division of Science Resources Studies include the R&D Expenditures Survey, Federal Support Survey, and the Graduate Enrollment and Support Survey. Data from surveys of universities and

colleges conducted by the National Center for Education Statistics include Earned Degrees, Opening Fall Enrollment, Faculty Salaries, Tenure, and Fringe Benefits, and Financial Statistics. Data from other sources include the National Research Council Doctorate Program Ratings.

CASPAR is distributed on CD-ROM compact disk. For additional information on CASPAR, write or FAX to the following address:

Quantum Research Corporation
ATTN: CASPAR
7315 Wisconsin Ave, Suite 631W
Bethesda, MD 20814

FAX Number: (301) 657-3862

Table A-1a. Response rates for the Academic Science and Engineering R&D Expenditures Survey at all institutions, by type of institution: FY 1991

Highest degree granted	Number in survey universe	Number in sample pop.	Number of complete responses	Number of partial responses	Total number of responses	Response rate
Grand total	614	478	308	157	465	97.3%
Universities and colleges total	595	459	289	157	446	97.2
Doctorate	327	327	210	111	321	98.2
Master's	178	76	48	25	73	96.1
Bachelor's and no S&E degree	90	56	31	21	52	92.9
FFRDCs total	19	19	19	0	19	100.0

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table A-1b. Response rates for the Academic Science and Engineering R&D Expenditures Survey at universities and colleges, by sampling strata and highest degree granted: FY 1991

Sampling Stratum	Number in survey universe	Number in sample pop.	Number of complete responses	Number of partial responses	Total number of responses	Response rate
Grand total	595	459	289	157	446	97.2%
#1 Doctorate stratum [1]	305	305	194	105	299	98.0
#2 HBCU stratum	70	70	32	32	64	91.4
Doctorate	7	7	2	5	7	100.0
Master's	20	20	8	10	18	90.0
Bachelor's and no S&E degree	43	43	22	17	39	90.7
#3 University systems stratum	36	36	31	5	36	100.0
Doctorate	15	15	14	1	15	100.0
Master's	20	20	16	4	20	100.0
Bachelor's and no S&E degree	1	1	1	0	1	100.0
#4 Master's or below stratum [2]	184	48	32	15	47	97.9
Master's	138	36	24	11	35	97.2
Bachelor's and no S&E degree	46	12	8	4	12	100.0

[1] Doctorate stratum does not include doctorate-granting institutions that are recorded in either the HBCU or the university system stratum.

[2] Master's or below stratum does not include master's-granting institutions or bachelor's and no S&E degree granting institutions that are recorded in either the HBCU or the university systems stratum.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table A-2. Imputed and/or estimated amount for the Academic Science and Engineering R&D Expenditures Survey at universities and colleges, by type of institution: FY 1991

[Dollars in millions]

Highest degree granted	National estimate of separately budgeted R&D expenditures	Amount inflated due to weighting	Amount imputed and/or estimated	Imputed and/or estimated as percent of total
Total	17,620	140	151	0.9%
Doctorate-granting institutions	17,328	0	145	0.8
Nondoctorate-granting institutions	292	140	6	2.1

NOTES: Because of rounding, components may not add to totals.
Percentages are calculated from unrounded figures.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table A-3a. Imputed and/or estimated amount for the Academic Science and Engineering R&D Expenditures Survey at universities and colleges, by science and engineering field: FY 1991

[Dollars in millions]

Science and engineering field	National estimate of separately budgeted R&D expenditures	Amount inflated due to weighting	Amount imputed and/or estimated	Imputed and/or estimated as percent of total
Total	17,620	140	151	0.9%
Engineering	2,893	24	46	1.6
Physical sciences	1,937	26	34	1.8
Environmental sciences	1,120	22	73	6.5
Mathematical sciences	229	5	2	0.8
Computer sciences	544	4	3	0.5
Life sciences	9,493	30	187	2.0
Psychology	293	12	8	2.8
Social sciences	746	13	15	2.0
Other sciences	364	4	9	2.4

NOTES: Because of rounding, components may not add to totals.
Percentages are calculated from unrounded figures.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table A-3b. Imputed and/or estimated amount of federally financed Academic Science and Engineering R&D Expenditures at universities and colleges, by science and engineering field: FY 1991

[Dollars in millions]

Science and engineering field	National estimate of federally financed R&D expenditures	Amount inflated due to weighting	Amount imputed and/or estimated	Imputed and/or estimated as percent of total
Total	10,221	64	120	1.2%
Engineering	1,631	10	24	1.5
Physical sciences	1,379	13	25	1.8
Environmental sciences	704	14	61	8.7
Mathematical sciences	169	3	1	0.7
Computer sciences	366	2	1	0.3
Life sciences	5,402	11	111	2.1
Psychology	194	10	7	3.5
Social sciences	247	3	6	2.3
Other sciences	128	**	3	2.6

NOTES: A double asterisk (**) indicates that the amount is less than $500,000, but greater than zero.
Because of rounding, components may not add to totals.
Percentages are calculated from unrounded figures.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table A-4. Imputed and/or estimated amount for the Academic Science and Engineering R&D Expenditures Survey at universities and colleges, by source of funds: FY 1991

[Dollars in millions]

Source of funds	National estimate of separately budgeted R&D expenditures	Amount inflated due to weighting	Amount imputed and/or estimated	Imputed and/or estimated as percent of total
Total	17,620	140	151	0.9%
Federal government	10,221	64	120	1.2
State and local government	1,483	22	12	0.8
Industry	1,216	15	21	1.7
Institutional funds	3,369	27	42	1.2
All other sources	1,333	11	59	4.4

NOTES: Because of rounding, components may not add to totals.
Percentages are calculated from unrounded figures.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table A-5. Standard errors of the estimates (SE) and coefficients of variation (CV) for the Academic Science and Engineering R&D Expenditures Survey at all institutions, by science and engineering field: FY 1991

[Dollars in thousands]

Science and engineering field	Separately budgeted R&D expenditures		Federally financed R&D expenditures	
	1.96 SE	1.96 CV	1.96 SE	1.96 CV
Total	49,767	0.3%	31,882	0.3%
Engineering	15,455	0.5	8,081	0.5
Physical sciences	7,091	0.4	5,108	0.4
Environmental sciences	18,075	1.6	11,809	1.7
Mathematical sciences	2,734	1.2	1482	0.9
Computer sciences	1,784	0.3	877	0.2
Life sciences	10,842	0.1	4,055	0.1
Psychology	10,194	3.5	9,804	5.0
Social sciences	6,794	0.9	1,715	0.7
Other sciences	2,423	0.7	283	0.2

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

SECTION B. DETAILED STATISTICAL TABLES

To obtain accurate historical data, use only the latest detailed statistical tables for FY 1991 and not data published earlier. Institutions revise prior-year data when important changes occur in reporting practices and program classifications, and only the latest tables incorporate such changes.

Universities and Colleges

R&D EXPENDITURES **Page**

B-1. By year and source of funds: fiscal years 1953-91 23
B-2. By year and character of work: fiscal years 1953-91 24

R&D EXPENDITURES BY SOURCE OF FUNDS AND SCIENCE & ENGINEERING FIELD

B-3. Total R&D: fiscal years 1984-91 25
B-4. Federally financed R&D: fiscal years 1984-91 26
B-5. Non-Federal R&D: fiscal years 1984-91 27
B-6. Total R&D at doctorate-granting institutions: fiscal years 1984-91 28
B-7. Federally financed R&D at doctorate-granting institutions: fiscal years 1984-91 29
B-8. Non-Federal R&D at doctorate-granting institutions: fiscal years 1984-91 30
B-9. R&D at public institutions: fiscal years 1984-91 31
B-10. Federally financed R&D at public institutions: fiscal years 1984-91 32
B-11. Non-Federal R&D at public institutions: fiscal years 1984-91 33
B-12. R&D at private institutions: fiscal years 1984-91 34
B-13. Federally financed R&D at private institutions: fiscal years 1984-91 35
B-14. Non-Federal R&D at private institutions: fiscal years 1984-91 36
B-15. Total R&D at public and private doctorate-granting institutions: fiscal years 1984, 1990, and 1991 37
B-16. Federally financed R&D at public and private doctorate-granting institutions: fiscal years 1984, 1990, and 1991 38
B-17. Non-Federal R&D at public and private doctorate-granting institutions: fiscal years 1984, 1990, and 1991 39

R&D EXPENDITURES AT HISTORICALLY BLACK INSTITUTIONS BY SOURCE OF FUNDS AND SCIENCE & ENGINEERING FIELD **Page**

B-18. Total R&D: fiscal years 1984-91 40
B-19. Federally financed R&D: fiscal years 1984-91 41
B-20. Non-Federal R&D: fiscal years 1984-91 42

GEOGRAPHIC DISTRIBUTION OF R&D EXPENDITURES

B-21. Total R&D by division and source: fiscal year 1991 43
B-22. Total R&D at doctorate-granting institutions by division, State, and source of funds: fiscal year 1991 44
B-23. Total R&D at doctorate-granting institutions by division and State: fiscal years 1984-91 45
B-24. Federally financed R&D at doctorate-granting institutions by division and State: fiscal years 1984-91 46
B-25. State and Local government-financed R&D at doctorate-granting institutions by division and State: fiscal years 1984-91 47
B-26. Industry-financed R&D expenditures at doctorate-granting institutions by division and State: fiscal years 1984-91 48
B-27. Institutionally financed R&D expenditures at doctorate-granting institutions by division and State: fiscal years 1984-91 49
B-28. All other sources of financed R&D expenditures at doctorate-granting institutions by division and State: fiscal years 1984-91 50
B-29. R&D expenditures at doctorate-granting institutions by State, control, source of funds, and institution: fiscal year 1991 51
B-30. R&D expenditures at doctorate-granting institutions by division, State, and science & engineering field: fiscal year 1991 61
B-31. R&D expenditures at doctorate-granting institutions by State, control, science and engineering field, and institution: fiscal year 1991 62

R&D EXPENDITURES,
IN DESCENDING ORDER OF AMOUNTS
BY INSTITUTION

Page

B-32. Total expenditures for all R&D performers: fiscal years 1984-91 72
B-33. Federally financed expenditures for all R&D performers: fiscal years 1984-91 82
B-34. Non-Federal expenditures for 200 largest R&D performers: fiscal years 1984-91 92
B-35. By source of funds for 200 largest R&D performers: fiscal year 1991 96
B-36. By source of funds for 150 largest public R&D performers: fiscal year 1991 100
B-37. By source of funds for 100 largest private R&D performers: fiscal year 1991 103
B-38. Industry-sponsored R&D for 200 largest performers: fiscal years 1984-91 105
B-39. By field of science and engineering for 200 largest R&D performers: fiscal year 1991 109
B-40. By field of science and engineering for 200 largest federally financed R&D performers: fiscal year 1991 113
B-41. By field of science and engineering for 200 largest non-Federal R&D performers: fiscal year 1991 117
B-42. By field of science and engineering for 150 largest public R&D performers: fiscal year 1991 121
B-43. By field of science and engineering for 100 largest federally financed public R&D performers: fiscal year 1991 124
B-44. By field of science and engineering for 100 largest private R&D performers: fiscal year 1991 126
B-45. By field of science and engineering for 100 largest federally financed private R&D performers: fiscal year 1991 128
B-46. Total and federally financed for historically black R&D performers: fiscal years 1988-91 130

R&D EXPENDITURES, BY
SCIENCE & ENGINEERING FIELD AND
SELECTED SUBFIELDS, IN DESCENDING
ORDER OF AMOUNTS BY INSTITUTION

B-47. Total and federally financed for 100 largest R&D performers in engineering: fiscal years 1988-91 132

Page

B-48. For 100 largest R&D performers in engineering, with subfields differentiated: fiscal year 1991 134
B-49. For 100 largest federally financed R&D performers in engineering, with subfields differentiated: fiscal year 1991 136
B-50. For 100 largest R&D performers in the physical sciences, with 1990 subfields differentiated: fiscal years 1988-91 138
B-51. For 100 largest federally financed R&D performers in the physical sciences, with 1991 subfields differentiated: fiscal years 1988-91 140
B-52. Total and federally financed for 100 largest R&D performers in chemistry: fiscal years 1988-91 142
B-53. Total and federally financed for 100 largest R&D performers in physics: fiscal years 1988-91 144
B-54. For 100 largest R&D performers in the environmental sciences, with 1991 subfields differentiated: fiscal years 1988-91 146
B-55. For 100 largest federally financed R&D performers in the environmental sciences, with 1991 subfields differentiated fiscal years 1988-91 148
B-56. Total and federally financed for 100 largest R&D performers in the mathematical sciences: fiscal years 1988-91 150
B-57. Total and federally financed for 100 largest R&D performers in the computer sciences: fiscal years 1988-91 152
B-58. For 150 largest R&D performers in the life sciences, with 1991 subfields differentiated: fiscal years 1988-91 154
B-59. For 150 largest federally financed R&D performers in the life sciences, with 1991 subfields differentiated: fiscal years 1988-91 157
B-60. Total and federally financed for 100 largest R&D performers in the agricultural sciences: fiscal years 1988-91 160
B-61. Total and federally financed for 100 largest R&D performers in the biological sciences: fiscal years 1988-91 162
B-62. Total and federally financed for 100 largest R&D performers in the medical sciences: fiscal years 1988-91 164
B-63. Total and federally financed for 100 largest R&D performers in psychology: fiscal years 1988-91 166

Page

B-64. For 100 largest R&D performers in the social sciences, with 1991 subfields differentiated: fiscal years 1988-91 168
B-65. For 100 largest federally financed R&D performers in the social sciences, with 1991 subfields differentiated: fiscal years 1988-91 170

CURRENT FUND EXPENDITURES FOR RESEARCH EQUIPMENT BY SOURCE OF FUNDS AND SCIENCE & ENGINEERING FIELD

B-66. Summary for all institutions: fiscal years 1984, 1990, and 1991 172
B-67. Summary for doctorate-granting institutions: fiscal years 1984, 1990, and 1991 173
B-68. Summary for all public and private institutions: fiscal year 1991 174
B-69. Total and federally financed for 100 largest institutions ranked in descending order of amounts: fiscal years 1988-91 175

University-Administered Federally Funded Research and Development Centers

R&D EXPENDITURES AT UNIVERSITY-ADMINISTERED FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTERS

B-70. Total R&D by year, character of work, and percent of total: fiscal years 1953-91 177
B-71. Total R&D by field of science & engineering: fiscal years 1984-91 178
B-72. Federally financed R&D by field of science & engineering: fiscal years 1984-91 179
B-73. R&D in descending order of amounts by field of science & engineering: fiscal year 1991 180
B-74. Total and federally financed R&D in descending order of amounts: fiscal years 1988-91 181

Table B-1. R&D expenditures at universities and colleges, by source of funds: fiscal years 1953-91

[Dollars in millions]

Fiscal year	Total	Source of funds				
		Federal Government	State and local governments	Industry	Institutional funds	All other sources
1953	255	138	37	19	35	26
1954	290	160	42	22	38	28
1955	312	169	47	25	41	30
1956	372	213	53	29	43	34
1957	410	229	60	34	49	38
1958	456	254	68	39	53	42
1959	526	306	76	39	58	47
1960	646	405	85	40	64	52
1961	763	500	95	40	70	58
1962	904	613	106	40	79	66
1963	1,081	760	118	41	89	73
1964	1,275	917	132	40	103	83
1965	1,474	1,073	143	41	124	93
1966	1,715	1,261	156	42	148	108
1967	1,921	1,409	164	48	181	119
1968	2,149	1,572	172	55	218	132
1969	2,225	1,600	197	60	223	145
1970	2,335	1,647	219	61	243	165
1971	2,500	1,724	255	70	274	177
1972	2,630	1,795	269	74	305	187
1973	2,884	1,985	295	84	318	202
1974	3,022	2,032	308	95	368	219
1975	3,409	2,288	332	113	417	259
1976	3,729	2,512	364	123	446	285
1977	4,067	2,726	374	139	514	314
1978 1/	4,625	3,059	414	170	623	359
1979	5,380	3,604	476	194	738	368
1980	6,077	4,104	498	236	837	403
1981	6,847	4,571	546	292	1,004	435
1982	7,323	4,768	616	337	1,111	491
1983	7,881	4,989	626	389	1,302	576
1984	8,620	5,430	690	475	1,411	614
1985	9,686	6,063	752	560	1,617	694
1986	10,928	6,710	915	700	1,868	734
1987	12,154	7,341	1,024	790	2,168	831
1988	13,466	8,191	1,107	872	2,355	941
1989	15,016	8,991	1,234	998	2,712	1,080
1990	16,344	9,636	1,340	1,134	3,017	1,218
1991	17,620	10,221	1,483	1,216	3,369	1,333

1/ Estimated, based on data collected from doctorate-granting institutions only.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-2. R&D expenditures at universities and colleges, by character of work: fiscal years 1953-91

[Dollars in millions]

Fiscal year	Total	Character of work			
		Basic research		Applied research and development	
		Amount	Percent of total	Amount	Percent of total
1953	255	110	43.1%	145	56.9%
1954	290	136	46.9	154	53.1
1955	312	159	51.0	153	49.0
1956	372	200	53.8	172	46.2
1957	410	240	58.5	170	41.5
1958	456	281	61.6	175	38.4
1959	526	343	65.2	183	34.8
1960	646	433	67.0	213	33.0
1961	763	536	70.2	227	29.8
1962	904	659	72.9	245	27.1
1963	1,081	814	75.3	267	24.7
1964	1,275	1,003	78.7	272	21.3
1965	1,474	1,138	77.2	336	22.8
1966	1,715	1,303	76.0	412	24.0
1967	1,921	1,457	75.8	464	24.2
1968	2,149	1,650	76.8	499	23.2
1969	2,225	1,711	76.9	514	23.1
1970	2,335	1,796	76.9	539	23.1
1971	2,500	1,914	76.6	586	23.4
1972	2,630	2,022	76.9	608	23.1
1973	2,884	2,053	71.2	831	28.8
1974	3,022	2,153	71.2	869	28.8
1975	3,409	2,410	70.7	999	29.3
1976	3,729	2,549	68.4	1,180	31.6
1977	4,067	2,800	68.8	1,267	31.2
1978 1/	4,825	--	--	--	--
1979	5,380	3,628	67.4	1,752	32.6
1980	6,077	4,042	66.5	2,034	33.5
1981	6,847	4,593	67.1	2,253	32.9
1982	7,323	4,878	66.6	2,445	33.4
1983	7,881	5,303	67.3	2,578	32.7
1984	8,620	5,732	66.5	2,888	33.5
1985	9,686	6,553	67.7	3,133	32.3
1986	10,928	7,490	68.5	3,437	31.5
1987	12,154	8,392	69.0	3,762	31.0
1988	13,466	8,893	66.0	4,573	34.0
1989	15,016	9,801	65.3	5,215	34.7
1990	16,344	10,681	65.4	5,663	34.6
1991	17,620	11,538	65.5	6,082	34.5

1/ Data were not collected in fiscal year 1978.

NOTE: R&D expenditures by character of work are based on estimates provided by the universities and colleges for basic research.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-3. R&D expenditures at universities and colleges, by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total	8,619,762	9,686,030	10,927,655	12,153,776	13,465,794	15,016,117	16,344,278	17,620,209
Source of funds								
Federal Government	5,429,646	6,063,028	6,710,075	7,341,228	8,191,150	8,991,478	9,635,724	10,220,505
State and local governments	690,484	752,146	915,197	1,023,557	1,106,634	1,234,298	1,339,770	1,482,642
Industry	475,329	560,021	699,795	790,126	871,772	998,211	1,133,998	1,215,805
Institutional funds	1,410,750	1,616,766	1,868,237	2,167,593	2,355,324	2,712,196	3,016,763	3,368,518
All other sources	613,553	694,069	734,351	831,272	940,914	1,079,934	1,218,024	1,332,740
Field								
Engineering, total	1,231,950	1,417,876	1,641,081	1,892,452	2,097,242	2,398,739	2,682,615	2,892,749
Aeronautical and astronautical	69,757	80,525	94,422	108,150	122,814	145,077	159,320	174,321
Chemical	101,513	116,210	132,260	148,362	162,559	194,060	214,887	238,553
Civil	139,714	153,156	178,090	190,873	225,265	246,509	285,113	315,134
Electrical	295,159	337,403	394,984	451,095	509,597	600,396	667,746	682,213
Mechanical	178,975	207,751	228,117	275,135	303,812	344,141	392,518	415,071
Metallurgical and materials 1/	--	--	--	--	--	--	275,238	301,992
Other, n.e.c	446,832	522,831	613,208	718,837	773,195	868,556	667,793	765,466
All sciences, total	7,387,812	8,268,154	9,286,574	10,261,324	11,368,552	12,617,378	13,681,663	14,727,460
Physical sciences	1,000,632	1,148,668	1,287,122	1,391,359	1,546,207	1,637,955	1,796,464	1,936,858
Astronomy	80,474	96,083	101,795	108,429	126,764	136,590	169,594	210,149
Chemistry	372,066	421,391	469,651	513,505	565,318	607,812	649,798	669,999
Physics	473,969	551,401	631,018	686,582	731,655	774,957	831,939	883,038
Other, n.e.c	74,123	79,793	84,658	102,843	122,470	118,595	145,133	173,672
Environmental sciences	645,270	704,711	775,249	834,745	889,075	1,009,468	1,072,800	1,119,904
Atmospheric	101,795	107,534	119,948	128,363	133,692	166,562	173,117	176,446
Earth sciences	227,663	253,797	274,422	283,960	294,305	322,514	354,119	380,034
Oceanography	236,784	257,973	279,992	299,949	333,282	365,382	383,473	396,403
Other, n.e.c	79,028	85,407	100,887	122,473	127,796	155,009	162,091	167,021
Mathematical sciences	123,149	127,782	151,760	176,867	198,551	213,622	220,353	229,495
Computer sciences	224,132	280,808	321,382	372,492	408,607	472,181	509,216	544,464
Life sciences	4,710,957	5,278,277	5,889,772	6,526,875	7,255,708	8,079,075	8,762,406	9,492,904
Agricultural sciences	954,219	999,265	1,089,341	1,120,703	1,176,331	1,285,994	1,356,408	1,463,849
Biological sciences	1,572,737	1,779,883	1,945,119	2,142,020	2,397,431	2,638,066	2,854,582	3,056,720
Medical sciences	2,033,533	2,318,369	2,615,676	3,000,424	3,377,752	3,827,673	4,181,617	4,569,054
Other, n.e.c	150,468	180,760	239,636	263,728	304,194	327,341	369,799	403,281
Psychology	145,304	158,176	170,313	187,503	213,320	237,141	258,182	293,440
Social sciences	358,861	383,405	462,961	502,529	552,605	637,174	702,059	745,987
Economics	108,528	118,060	135,863	149,672	163,475	188,488	202,200	210,296
Political science	56,249	59,443	68,873	81,318	87,154	103,778	112,013	121,464
Sociology	70,757	75,510	96,950	96,790	109,677	121,949	134,274	157,806
Other, n.e.c	123,327	130,392	161,275	174,749	192,299	222,959	253,571	256,422
Other sciences, n.e.c	179,507	186,327	228,015	268,954	304,479	330,763	360,185	364,408

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-4. Federally financed R&D expenditures at universities and colleges, by science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Field	1984	1985	1986	1987	1988	1989	1990	1991
Total	5,429,646	6,063,028	6,710,075	7,341,228	8,191,150	8,991,478	9,635,724	10,220,505
Engineering, total	788,679	867,105	977,578	1,112,663	1,229,753	1,383,163	1,524,286	1,630,944
Aeronautical and astronautical	54,555	61,519	72,671	80,168	93,681	111,737	122,968	131,708
Chemical	59,953	64,619	73,284	76,652	85,506	101,187	107,682	114,310
Civil	72,421	78,834	88,372	89,711	103,144	101,688	116,000	122,873
Electrical	209,652	228,549	260,340	292,216	330,387	389,773	435,125	437,494
Mechanical	118,961	134,131	148,005	178,487	192,614	213,864	238,744	243,182
Metallurgical and materials 1/	--	--	--	--	--	--	141,654	155,051
Other, n.e.c	273,137	299,453	334,906	395,429	424,421	464,913	362,114	426,326
All sciences, total	4,640,967	5,195,923	5,732,497	6,228,565	6,961,397	7,608,315	8,111,438	8,589,561
Physical sciences	781,880	890,419	982,654	1,046,773	1,152,342	1,188,509	1,302,889	1,378,591
Astronomy	53,181	64,393	69,686	71,189	83,744	87,438	112,157	135,362
Chemistry	279,210	312,795	338,292	368,000	402,876	420,912	444,037	449,644
Physics	390,100	453,356	510,530	530,364	574,281	597,887	642,844	677,582
Other, n.e.c	59,389	59,875	64,146	77,220	91,441	82,272	103,850	116,004
Environmental sciences	445,676	473,577	516,304	542,990	585,977	657,506	685,807	704,410
Atmospheric	82,171	85,872	97,469	105,887	109,232	131,198	131,804	132,217
Earth sciences	139,855	154,071	160,108	159,523	174,522	186,079	203,669	215,983
Oceanography	180,949	187,666	208,063	217,702	238,508	265,942	267,633	267,903
Other, n.e.c	42,701	45,968	50,664	59,878	63,715	74,287	82,701	88,307
Mathematical sciences	92,317	97,031	114,397	131,511	149,436	155,841	158,667	169,147
Computer sciences	162,920	195,717	232,661	257,325	289,196	322,440	339,961	366,009
Life sciences	2,830,199	3,187,583	3,492,125	3,834,743	4,324,348	4,779,982	5,076,155	5,402,406
Agricultural sciences	268,859	294,049	292,426	297,633	322,523	348,511	352,259	379,108
Biological sciences	1,092,669	1,208,455	1,310,625	1,417,640	1,601,646	1,732,416	1,841,096	1,950,904
Medical sciences	1,374,035	1,576,544	1,742,129	1,961,800	2,212,997	2,501,041	2,664,825	2,830,739
Other, n.e.c	94,636	108,535	146,945	157,670	187,182	198,015	217,975	241,656
Psychology	97,922	105,904	114,001	123,830	140,358	155,802	168,347	194,267
Social sciences	142,976	153,838	172,902	168,314	188,529	211,240	224,702	247,188
Economics	42,413	43,711	45,448	43,425	49,171	54,217	54,198	58,800
Political science	19,051	19,680	20,183	24,047	25,176	25,563	24,959	28,800
Sociology	38,354	40,501	49,784	44,843	48,459	53,714	59,620	71,614
Other, n.e.c	43,158	49,946	57,487	55,999	65,723	77,745	85,924	87,973
Other sciences, n.e.c	87,077	91,854	107,453	123,079	131,211	136,994	154,911	127,541

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-5. Non-Federal R&D expenditures at universities and colleges, by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total non-Federal	3,190,116	3,623,002	4,217,580	4,812,548	5,274,644	6,024,640	6,708,555	7,399,704
Source of funds								
State and local governments	690,484	752,146	915,197	1,023,557	1,106,634	1,234,298	1,339,770	1,482,642
Industry	475,329	560,021	699,795	790,126	871,772	998,211	1,133,998	1,215,805
Institutional funds	1,410,750	1,616,766	1,868,237	2,167,593	2,355,324	2,712,196	3,016,763	3,368,518
All other sources	613,553	694,069	734,351	831,272	940,914	1,079,934	1,218,024	1,332,740
Field								
Engineering, total	443,271	550,771	663,503	779,789	867,489	1,015,576	1,138,329	1,261,805
Aeronautical and astronautical	15,202	19,006	21,751	27,982	29,133	33,340	36,352	42,614
Chemical	41,560	51,591	58,976	71,710	77,053	92,873	107,205	124,243
Civil	67,293	74,322	89,718	101,162	122,121	144,821	169,113	192,260
Electrical	85,507	108,854	134,644	158,879	179,210	210,622	232,821	244,719
Mechanical	60,014	73,620	80,112	96,648	111,198	130,276	153,775	171,889
Metallurgical and materials 1/	--	--	--	--	--	--	133,584	146,940
Other, n.e.c	173,695	223,378	278,302	323,408	348,774	403,643	305,680	339,140
All sciences, total	2,746,845	3,072,231	3,554,077	4,032,759	4,407,155	5,009,063	5,570,225	6,137,899
Physical sciences	218,752	258,249	304,468	344,586	393,865	449,445	493,575	558,267
Astronomy	27,293	31,690	32,109	37,240	43,020	49,152	57,437	74,787
Chemistry	92,856	108,596	131,359	145,505	162,442	186,900	205,761	220,355
Physics	83,869	98,045	120,488	136,218	157,374	177,070	189,094	205,456
Other, n.e.c	14,734	19,918	20,512	25,623	31,029	36,323	41,283	57,668
Environmental sciences	199,594	231,134	258,945	291,755	303,098	351,962	386,993	415,494
Atmospheric	19,824	21,662	22,479	22,478	24,460	35,364	41,313	44,230
Earth sciences	87,808	99,726	114,314	124,437	119,783	136,435	150,451	164,051
Oceanography	55,835	70,307	71,929	82,247	94,774	99,440	115,840	128,499
Other, n.e.c	36,327	39,439	50,223	62,595	64,081	80,722	79,389	78,714
Mathematical sciences	30,832	30,751	37,363	45,356	49,115	57,781	61,685	60,349
Computer sciences	61,212	85,091	88,721	115,167	119,411	149,741	169,255	178,455
Life sciences	1,880,758	2,090,694	2,397,647	2,692,132	2,931,360	3,299,093	3,686,251	4,090,496
Agricultural sciences	685,360	705,216	796,915	823,070	853,808	937,484	1,004,149	1,084,741
Biological sciences	480,068	571,428	634,494	724,380	795,785	905,650	1,013,486	1,105,815
Medical sciences	659,498	741,825	873,547	1,038,624	1,164,755	1,326,633	1,516,792	1,738,315
Other, n.e.c	55,832	72,225	92,691	106,058	117,012	129,326	151,825	161,625
Psychology	47,382	52,272	56,312	63,673	72,982	81,339	89,834	99,173
Social sciences	215,885	229,567	290,059	334,215	364,076	425,934	477,357	498,800
Economics	66,115	74,349	90,415	106,247	114,304	134,271	148,002	151,496
Political science	37,198	39,763	48,690	57,271	61,978	78,214	87,054	92,664
Sociology	32,403	35,009	47,166	51,947	61,218	68,234	74,654	86,191
Other, n.e.c	80,169	80,446	103,788	118,750	126,576	145,214	167,647	168,448
Other sciences, n.e.c	92,430	94,473	120,562	145,875	173,268	193,769	205,274	236,867

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-6. R&D expenditures at doctorate-granting institutions by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total	8,485,964	9,543,497	10,770,853	11,997,310	13,288,592	14,768,678	16,073,944	17,327,920
Source of funds								
Federal Government	5,342,761	5,969,330	6,607,795	7,243,809	8,079,993	8,844,360	9,478,022	10,052,851
State and local governments	677,520	738,509	899,952	1,005,933	1,088,452	1,202,960	1,300,282	1,447,736
Industry	466,391	550,632	688,418	777,390	857,774	978,050	1,113,255	1,192,376
Institutional funds	1,393,927	1,599,476	1,850,049	2,149,215	2,332,269	2,679,751	2,980,062	3,320,289
All other sources	605,365	685,550	724,639	820,963	930,104	1,063,557	1,202,323	1,314,668
Field								
Engineering, total	1,218,898	1,401,882	1,621,980	1,871,375	2,070,935	2,363,327	2,619,461	2,849,838
Aeronautical and astronautical	67,976	78,259	91,657	104,920	118,624	142,634	157,570	171,553
Chemical	101,269	115,968	131,970	147,809	161,390	192,360	213,132	237,341
Civil	137,631	150,761	175,449	188,132	221,753	242,009	280,553	308,494
Electrical	292,304	333,837	390,661	446,353	503,632	589,289	656,882	671,179
Mechanical	176,864	204,740	224,380	270,882	299,312	337,885	384,283	405,868
Metallurgical and materials 1/	--	--	--	--	--	--	273,135	299,698
Other, n.e.c	442,854	518,317	607,863	713,279	766,224	859,150	653,906	755,905
All sciences, total	7,267,066	8,141,615	9,148,873	10,125,935	11,217,657	12,405,351	13,454,483	14,478,082
Physical sciences	979,110	1,123,819	1,259,129	1,361,971	1,513,494	1,598,742	1,751,100	1,882,296
Astronomy	79,768	95,478	101,191	107,840	126,037	136,552	169,539	209,920
Chemistry	359,074	406,808	453,769	498,055	546,825	584,185	624,212	639,511
Physics	486,683	542,463	621,365	655,207	719,873	761,798	813,631	860,894
Other, n.e.c	73,585	79,070	82,804	100,869	120,759	116,207	143,718	171,971
Environmental sciences	629,940	687,559	757,203	815,714	870,952	979,710	1,039,222	1,084,074
Atmospheric	99,594	105,108	117,481	125,399	130,315	157,257	163,905	166,179
Earth sciences	222,895	248,915	269,080	278,181	289,278	318,456	346,264	371,081
Oceanography	232,432	254,173	276,208	296,123	330,184	353,950	371,872	384,068
Other, n.e.c	75,019	79,363	94,434	116,011	121,175	150,047	157,181	162,746
Mathematical sciences	119,043	124,118	147,570	173,574	194,971	209,245	215,404	221,271
Computer sciences	220,086	275,726	315,334	364,726	399,564	464,421	501,006	535,563
Life sciences	4,659,692	5,225,002	5,832,945	6,474,537	7,190,806	7,980,551	8,665,595	9,399,362
Agricultural sciences	929,961	975,317	1,063,995	1,097,769	1,150,799	1,245,845	1,315,752	1,420,127
Biological sciences	1,549,197	1,754,831	1,919,215	2,117,744	2,363,830	2,585,761	2,801,713	3,011,726
Medical sciences	2,032,170	2,316,430	2,612,992	2,997,597	3,374,844	3,823,196	4,179,574	4,565,988
Other, n.e.c	148,364	178,424	236,743	261,427	301,333	325,749	368,556	401,521
Psychology	141,189	153,695	165,522	182,208	207,037	226,316	243,579	275,416
Social sciences	340,984	368,191	446,560	488,303	539,186	619,038	684,141	723,487
Economics	103,267	115,201	133,540	147,472	160,814	184,921	198,318	204,863
Political science	54,457	57,656	67,095	79,850	85,480	102,499	110,576	120,381
Sociology	65,566	70,523	92,364	92,587	106,637	116,588	129,087	151,658
Other, n.e.c	117,694	124,811	153,561	168,394	186,255	215,030	246,160	246,585
Other sciences, n.e.c	177,022	183,505	224,610	264,902	301,647	327,328	354,436	356,613

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-7. Federally financed R&D expenditures at doctorate-granting institutions, by science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Field	1984	1985	1986	1987	1988	1989	1990	1991
Total	5,342,761	5,969,330	6,607,795	7,243,809	8,079,993	8,844,360	9,478,022	10,052,851
Engineering, total	781,679	858,269	967,043	1,101,538	1,216,153	1,365,676	1,503,333	1,609,763
Aeronautical and astronautical	53,027	59,489	70,173	77,243	89,901	109,728	121,515	129,545
Chemical	59,863	64,533	73,148	76,431	84,787	100,045	106,790	113,767
Civil	71,030	77,286	86,765	88,071	101,027	100,503	115,218	121,553
Electrical	208,380	226,948	258,526	290,380	328,222	383,430	428,232	430,478
Mechanical	117,873	132,396	145,712	175,994	190,011	210,807	234,028	237,285
Metallurgical and materials 1/	--	--	--	--	--	--	139,810	153,382
Other, n.e.c	271,506	297,617	332,719	393,419	422,205	461,163	357,740	423,753
All sciences, total	4,561,082	5,111,061	5,640,752	6,142,271	6,863,840	7,478,684	7,974,689	8,443,088
Physical sciences	767,560	873,333	963,805	1,026,963	1,130,252	1,162,903	1,274,605	1,344,523
Astronomy	52,667	63,919	69,291	70,798	83,225	87,420	112,121	135,168
Chemistry	270,729	302,911	327,300	357,696	389,931	406,229	428,674	431,836
Physics	385,025	446,891	503,543	521,940	586,246	588,164	630,591	662,273
Other, n.e.c	59,139	59,612	63,671	76,529	90,850	81,090	103,219	115,246
Environmental sciences	435,836	462,648	504,811	531,279	573,956	635,086	663,436	682,580
Atmospheric	80,018	83,606	95,164	103,058	106,073	122,540	123,589	123,538
Earth sciences	137,544	151,678	157,483	156,495	171,995	184,001	200,358	213,025
Oceanography	178,361	185,800	206,295	216,097	236,779	256,945	258,958	260,416
Other, n.e.c	39,913	41,564	45,869	55,629	59,109	71,580	80,531	85,601
Mathematical sciences	90,102	94,379	111,619	129,297	147,083	153,418	156,327	164,431
Computer sciences	160,660	192,515	228,637	252,232	282,709	318,216	336,278	361,249
Life sciences	2,792,679	3,148,419	3,451,093	3,799,468	4,281,329	4,719,782	5,015,495	5,343,599
Agricultural sciences	249,458	275,007	272,388	280,939	302,868	322,436	325,391	350,587
Biological sciences	1,077,194	1,191,546	1,293,907	1,402,648	1,582,189	1,702,699	1,809,106	1,922,657
Medical sciences	1,373,059	1,575,097	1,740,085	1,959,694	2,211,085	2,497,007	2,663,576	2,829,097
Other, n.e.c	92,968	106,769	144,713	156,187	185,207	197,640	217,422	241,258
Psychology	95,224	102,827	110,586	119,985	135,664	147,470	156,820	179,600
Social sciences	133,734	146,786	164,896	162,719	182,996	205,901	218,668	241,282
Economics	38,315	42,064	44,489	42,677	48,134	53,351	53,092	57,055
Political science	18,184	18,757	19,204	23,431	24,529	25,308	24,729	28,568
Sociology	35,603	37,936	47,415	42,552	47,011	52,422	58,107	69,818
Other, n.e.c	41,632	48,029	53,788	54,059	63,322	74,820	82,740	85,841
Other sciences, n.e.c	85,287	90,154	105,305	120,328	129,851	135,928	153,060	125,824

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-9. Non-Federal R&D expenditures at doctorate-granting institutions, by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total non-Federal	3,143,203	3,574,167	4,163,058	4,753,501	5,208,599	5,924,318	6,595,922	7,275,069
Source of funds								
State and local governments	677,520	738,509	899,952	1,005,933	1,088,452	1,202,960	1,300,282	1,447,738
Industry	466,391	550,632	688,418	777,390	857,774	978,050	1,113,255	1,192,376
Institutional funds	1,393,927	1,599,476	1,850,049	2,149,215	2,332,269	2,679,751	2,980,062	3,320,289
All other sources	605,365	685,550	724,639	820,963	930,104	1,063,557	1,202,323	1,314,666
Field								
Engineering, total	437,219	543,613	654,937	769,837	854,782	997,651	1,116,128	1,240,075
Aeronautical and astronautical	14,949	18,770	21,484	27,677	28,723	32,906	36,055	42,008
Chemical	41,406	51,435	58,822	71,378	76,603	92,315	108,342	123,574
Civil	66,601	73,475	88,684	100,061	120,726	141,506	165,335	188,941
Electrical	83,924	106,889	132,135	155,973	175,410	205,859	228,650	240,701
Mechanical	58,991	72,344	78,668	94,883	109,301	127,078	150,255	168,383
Metallurgical and materials 1/	--	--	--	--	--	--	133,325	146,316
Other, n.e.c	171,348	220,700	275,144	319,860	344,019	397,987	296,166	332,152
All sciences, total	2,705,984	3,030,554	3,508,121	3,983,664	4,353,817	4,926,667	5,479,794	6,034,994
Physical sciences	211,550	250,486	295,324	335,008	383,242	435,839	476,495	537,773
Astronomy	27,101	31,559	31,900	37,042	42,812	49,132	57,418	74,752
Chemistry	88,345	103,897	126,469	140,359	156,894	177,956	195,538	207,675
Physics	81,658	95,572	117,822	133,267	153,627	173,634	183,040	198,821
Other, n.e.c	14,446	19,458	19,133	24,340	29,909	35,117	40,499	56,725
Environmental sciences	194,104	224,911	252,392	284,435	296,996	344,644	375,786	401,494
Atmospheric	19,576	21,502	22,317	22,341	24,242	34,717	40,316	42,641
Earth sciences	85,351	97,237	111,597	121,686	117,283	134,455	145,906	158,056
Oceanography	54,071	68,373	69,913	80,026	93,405	97,005	112,914	123,652
Other, n.e.c	35,106	37,799	48,565	60,382	62,066	78,467	76,650	77,145
Mathematical sciences	28,941	29,739	35,951	44,277	47,888	55,827	59,077	56,840
Computer sciences	59,426	83,211	86,697	112,494	116,855	146,205	164,728	174,314
Life sciences	1,867,013	2,076,583	2,381,852	2,675,069	2,909,477	3,260,769	3,650,100	4,055,763
Agricultural sciences	680,503	700,310	791,607	816,830	847,931	923,409	990,361	1,069,540
Biological sciences	472,003	563,285	625,306	715,096	781,641	883,062	992,607	1,089,069
Medical sciences	659,111	741,333	872,907	1,037,903	1,163,779	1,326,189	1,515,998	1,736,691
Other, n.e.c	55,396	71,655	92,030	105,240	116,126	128,109	151,134	160,283
Psychology	45,965	50,868	54,936	62,223	71,373	78,846	86,759	95,816
Social sciences	207,250	221,405	281,664	325,584	356,190	413,137	465,473	482,205
Economics	64,952	73,137	89,051	104,795	112,680	131,570	145,226	147,808
Political science	36,273	38,899	47,891	56,419	60,951	77,191	85,847	91,813
Sociology	29,963	32,587	44,949	50,035	59,626	64,166	70,980	81,840
Other, n.e.c	76,062	76,782	99,773	114,335	122,933	140,210	163,420	160,744
Other sciences, n.e.c	91,735	93,351	119,305	144,574	171,796	191,400	201,376	230,789

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-9. R&D expenditures at public universities and colleges, by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total	5,584,348	6,285,044	7,110,791	7,900,839	8,770,575	9,857,300	10,822,665	11,779,032
Source of funds								
Federal Government	3,118,369	3,489,801	3,839,844	4,179,664	4,713,085	5,205,570	5,626,992	6,046,980
State and local governments	632,226	683,915	831,559	926,493	995,732	1,108,694	1,204,234	1,338,844
Industry	285,857	342,533	440,190	494,559	546,795	636,892	739,365	798,832
Institutional funds	1,167,234	1,327,788	1,549,869	1,802,234	1,955,375	2,261,820	2,523,083	2,792,319
All other sources	380,662	441,007	449,329	497,889	559,588	644,325	728,991	802,057
Field								
Engineering, total	736,328	852,185	1,005,090	1,167,805	1,335,181	1,558,898	1,770,866	1,953,132
Aeronautical and astronautical	31,457	37,985	44,475	52,807	66,807	78,667	90,811	102,999
Chemical	64,822	75,539	83,520	91,988	102,298	121,302	143,722	152,829
Civil	107,471	115,213	137,529	144,496	170,316	194,491	230,280	257,422
Electrical	160,311	181,258	218,121	250,796	298,926	364,427	408,367	421,879
Mechanical	92,366	113,949	128,706	157,125	184,112	207,250	245,707	266,165
Metallurgical and materials 1/	--	--	--	--	--	--	197,893	223,193
Other, n.e.c	279,901	328,241	392,739	470,593	512,722	592,761	454,088	528,646
All sciences, total	4,848,020	5,432,859	6,105,701	6,733,034	7,435,394	8,298,401	9,051,799	9,825,901
Physical sciences	590,514	682,100	753,795	829,523	928,179	1,009,826	1,115,282	1,215,373
Astronomy	57,672	65,797	69,560	76,175	88,361	95,754	113,577	142,377
Chemistry	236,828	268,154	297,333	330,203	362,110	391,746	417,714	439,300
Physics	263,265	313,792	349,561	372,832	416,046	456,428	499,381	527,390
Other, n.e.c	32,749	34,357	37,341	50,313	61,662	65,898	84,610	106,305
Environmental sciences	468,011	521,733	583,835	632,787	664,720	744,083	812,919	850,197
Atmospheric	78,719	88,012	100,121	108,505	106,884	129,500	138,827	142,047
Earth sciences	165,597	183,925	202,247	207,549	212,209	231,153	259,144	281,964
Oceanography	174,508	194,124	213,067	233,683	262,149	279,517	306,636	314,777
Other, n.e.c	49,187	55,672	68,400	83,050	83,478	103,913	108,314	111,410
Mathematical sciences	65,904	67,140	82,889	99,347	107,902	119,695	127,500	134,214
Computer sciences	92,944	122,009	139,303	167,067	170,421	209,112	244,085	282,823
Life sciences	3,141,273	3,509,736	3,907,870	4,289,372	4,767,497	5,329,395	5,762,458	6,292,071
Agricultural sciences	923,180	963,721	1,050,770	1,080,284	1,132,669	1,237,734	1,308,341	1,413,547
Biological sciences	971,762	1,126,280	1,228,745	1,329,741	1,490,371	1,648,443	1,782,525	1,934,835
Medical sciences	1,160,392	1,311,847	1,473,398	1,707,830	1,957,292	2,239,301	2,446,399	2,693,641
Other, n.e.c	85,939	107,888	154,957	171,517	187,165	203,917	225,192	250,047
Psychology	95,602	106,943	113,866	123,547	140,583	159,468	175,206	204,351
Social sciences	263,364	280,833	339,990	363,101	402,725	459,709	524,673	560,688
Economics	83,485	91,896	108,896	114,249	119,630	138,278	151,524	161,855
Political science	38,092	41,107	45,868	50,104	52,467	61,427	72,263	76,277
Sociology	47,273	49,542	61,092	58,764	71,808	81,477	95,430	113,327
Other, n.e.c	94,514	98,288	126,134	139,984	158,820	178,527	205,456	209,229
Other sciences, n.e.c	130,408	142,365	184,153	228,290	253,367	267,113	289,676	286,183

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-10. Federally financed R&D expenditures at public universities and colleges, by science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Field	1984	1985	1986	1987	1988	1989	1990	1991
Total	3,118,369	3,489,801	3,839,844	4,179,664	4,713,085	5,205,570	5,626,992	6,046,980
Engineering, total	397,298	436,588	500,788	571,025	672,545	767,162	877,601	957,327
Aeronautical and astronautical	20,401	24,433	30,110	33,603	47,462	57,138	65,767	71,525
Chemical	37,619	40,956	42,953	42,710	49,408	55,394	64,897	67,790
Civil	50,456	54,273	62,842	58,724	68,515	71,053	83,932	89,758
Electrical	100,705	106,053	123,657	140,219	172,932	215,451	245,939	247,302
Mechanical	52,986	63,925	71,946	89,017	101,820	108,986	128,072	135,212
Metallurgical and materials 1/	--	--	--	--	--	--	93,137	105,249
Other, n.e.c	135,131	146,948	169,280	206,752	232,408	259,139	195,859	240,492
All sciences, total	2,721,071	3,053,213	3,339,056	3,608,639	4,040,540	4,438,408	4,749,391	5,089,653
Physical sciences	427,484	488,830	523,848	562,966	623,993	661,761	730,624	778,638
Astronomy	38,416	43,647	45,323	46,780	53,198	55,156	68,118	82,690
Chemistry	168,648	189,967	202,251	222,335	244,297	257,228	267,096	274,657
Physics	199,224	237,443	255,873	265,299	291,191	314,991	346,206	363,055
Other, n.e.c	21,196	17,773	20,401	28,552	35,307	34,386	49,204	58,236
Environmental sciences	299,985	322,562	358,721	374,233	400,666	434,933	467,254	478,950
Atmospheric	61,282	68,305	80,071	87,963	86,042	98,264	101,120	101,533
Earth sciences	92,053	97,619	100,672	96,228	107,033	110,886	122,795	134,186
Oceanography	127,007	132,640	149,771	158,458	175,511	188,494	199,056	195,245
Other, n.e.c	19,663	23,998	28,207	31,584	32,080	37,289	44,282	47,985
Mathematical sciences	40,686	41,470	50,663	60,263	66,863	72,214	76,642	85,084
Computer sciences	53,961	65,849	82,677	91,983	94,145	108,201	123,000	156,710
Life sciences	1,676,054	1,892,792	2,047,372	2,229,023	2,530,391	2,802,408	2,945,821	3,172,429
Agricultural sciences	261,297	285,314	282,447	286,698	312,141	336,449	340,770	368,493
Biological sciences	622,809	693,402	746,707	797,713	903,717	984,748	1,030,758	1,113,269
Medical sciences	748,006	859,595	934,416	1,053,862	1,208,741	1,370,259	1,455,813	1,556,660
Other, n.e.c	43,942	54,481	83,802	90,750	105,792	110,952	118,481	136,007
Psychology	61,646	67,487	71,614	75,993	86,841	98,703	108,409	132,498
Social sciences	94,478	101,007	115,004	108,966	127,942	145,689	166,641	183,090
Economics	32,369	33,912	35,094	32,331	35,561	41,351	43,982	48,435
Political science	11,448	12,271	12,066	12,297	12,616	12,738	13,858	16,216
Sociology	22,985	23,052	27,801	23,999	29,047	32,458	38,950	46,971
Other, n.e.c	27,676	31,772	40,043	40,339	50,718	59,142	69,851	71,469
Other sciences, n.e.c	66,777	73,216	89,157	105,212	109,699	114,499	131,000	102,254

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-11. Non-Federal R&D expenditures at public universities and colleges, by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total non-Federal	2,465,979	2,795,243	3,270,947	3,721,175	4,057,490	4,651,730	5,195,673	5,732,052
Source of funds								
State and local governments	632,226	683,915	831,559	926,493	995,732	1,108,694	1,204,234	1,338,844
Industry	285,857	342,533	440,190	494,559	546,795	636,892	739,365	798,832
Institutional funds	1,167,234	1,327,788	1,549,869	1,802,234	1,955,375	2,261,820	2,523,083	2,792,319
All other sources	380,662	441,007	449,329	497,889	559,588	644,325	728,991	802,057
Field								
Engineering, total	339,030	415,597	504,302	596,780	662,636	791,736	893,265	995,804
Aeronautical and astronautical	11,056	13,552	14,365	19,204	19,345	21,529	25,044	31,475
Chemical	27,203	34,583	40,567	49,278	52,890	65,908	78,825	85,039
Civil	57,015	60,940	74,687	85,772	101,801	123,438	146,348	167,664
Electrical	59,606	75,205	94,464	110,577	125,994	148,976	162,428	174,577
Mechanical	39,380	50,024	56,760	68,108	82,292	98,264	117,635	130,953
Metallurgical and materials 1/	--	--	--	--	--	--	104,756	117,943
Other, n.e.c	144,770	181,293	223,459	263,841	280,314	333,622	258,229	288,153
All sciences, total	2,126,949	2,379,646	2,766,645	3,124,395	3,394,854	3,859,994	4,302,408	4,736,247
Physical sciences	163,030	193,270	229,947	266,557	304,186	348,065	384,658	436,735
Astronomy	19,256	22,150	24,237	29,395	35,163	40,598	45,459	59,687
Chemistry	68,180	78,187	95,082	107,868	117,813	134,519	150,618	164,644
Physics	64,041	76,349	93,688	107,533	124,855	141,437	153,175	164,335
Other, n.e.c	11,553	16,584	16,940	21,761	26,355	31,512	35,406	48,069
Environmental sciences	168,026	199,171	225,114	258,554	264,054	309,150	345,666	371,248
Atmospheric	17,457	19,707	20,050	20,542	20,842	31,236	37,707	40,514
Earth sciences	73,544	86,306	101,575	111,321	105,176	120,267	136,348	147,778
Oceanography	47,501	61,484	63,296	75,225	86,638	91,023	107,580	119,531
Other, n.e.c	29,524	31,674	40,193	51,466	51,398	66,624	64,031	63,425
Mathematical sciences	25,218	25,670	32,226	39,084	41,039	47,481	50,858	49,130
Computer sciences	38,983	56,160	56,626	75,084	76,276	100,911	121,084	126,113
Life sciences	1,465,219	1,616,944	1,860,498	2,060,349	2,237,106	2,526,987	2,816,636	3,119,642
Agricultural sciences	661,883	678,407	768,323	793,586	820,528	901,285	967,571	1,047,054
Biological sciences	348,953	432,878	482,038	532,028	586,654	663,695	751,768	821,567
Medical sciences	412,386	452,252	538,982	653,968	748,551	869,042	990,586	1,136,981
Other, n.e.c	41,997	53,407	71,155	80,767	81,373	92,965	106,712	114,040
Psychology	33,956	39,456	42,252	47,554	53,742	60,765	66,797	71,853
Social sciences	168,886	179,826	224,986	254,135	274,783	314,020	358,032	377,598
Economics	51,116	57,984	71,802	81,918	84,069	96,928	107,542	113,420
Political science	26,644	28,836	33,802	37,807	39,851	48,689	58,405	60,061
Sociology	24,288	26,490	33,291	34,765	42,761	49,018	56,480	66,356
Other, n.e.c	66,838	66,516	86,091	99,645	108,102	119,385	135,605	137,760
Other sciences, n.e.c	63,631	69,149	94,996	123,078	143,668	152,614	158,876	183,929

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-12. R&D expenditures at private universities and colleges, by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total	3,035,414	3,400,986	3,816,864	4,252,937	4,695,219	5,158,818	5,521,613	5,841,177
Source of funds								
Federal Government	2,311,277	2,573,227	2,870,231	3,161,564	3,478,065	3,785,908	4,008,732	4,173,524
State and local governments	58,258	68,231	83,638	97,064	110,902	125,605	135,535	143,798
Industry	189,472	217,488	259,605	295,567	324,977	361,320	394,633	416,973
Institutional funds	243,516	288,978	318,368	365,359	399,949	450,376	493,681	576,199
All other sources	232,891	253,062	285,022	333,383	381,326	435,610	489,033	530,683
Field								
Engineering, total	495,622	565,691	635,991	724,647	762,061	839,841	891,749	939,617
Aeronautical and astronautical	38,300	42,540	49,947	55,343	56,007	66,410	68,509	71,322
Chemical	36,691	40,671	48,740	56,374	60,261	72,758	71,165	85,724
Civil	32,243	37,943	40,561	46,377	54,949	52,018	54,833	57,712
Electrical	134,848	156,145	176,863	200,299	210,671	235,968	259,380	260,334
Mechanical	86,609	93,802	99,411	118,010	119,700	136,890	146,811	148,906
Metallurgical and materials 1/	--	--	--	--	--	--	77,345	78,799
Other, n.e.c	166,931	194,590	220,469	248,244	260,473	275,796	213,705	236,820
All sciences, total	2,539,792	2,835,295	3,180,873	3,528,290	3,933,158	4,318,977	4,629,864	4,901,560
Physical sciences	410,118	466,568	533,327	561,836	618,028	628,129	681,182	721,485
Astronomy	22,802	30,286	32,235	32,254	38,403	40,836	56,017	67,771
Chemistry	135,238	153,237	172,318	183,302	203,208	216,066	232,065	230,698
Physics	210,704	237,609	281,457	293,750	315,609	318,530	332,557	355,848
Other, n.e.c	41,374	45,436	47,317	52,530	60,808	52,697	60,523	67,368
Environmental sciences	177,259	182,978	191,414	201,958	224,355	265,385	259,880	269,706
Atmospheric	23,076	19,522	19,827	19,858	26,808	37,062	34,290	34,400
Earth sciences	62,066	69,872	72,175	76,411	82,096	91,361	94,976	98,070
Oceanography	62,276	63,849	66,925	66,266	71,133	85,865	76,837	81,626
Other, n.e.c	29,841	29,735	32,487	39,423	44,318	51,097	53,777	55,611
Mathematical sciences	57,245	60,642	68,871	77,520	90,649	93,927	92,853	95,281
Computer sciences	131,188	158,799	182,079	205,425	238,186	263,069	265,131	261,641
Life sciences	1,569,684	1,768,541	1,981,902	2,237,503	2,488,211	2,749,680	2,999,948	3,200,833
Agricultural sciences	31,039	35,544	38,571	40,419	43,662	48,260	48,067	50,301
Biological sciences	600,975	653,603	716,374	812,279	907,060	989,623	1,072,056	1,121,884
Medical sciences	873,141	1,006,522	1,142,278	1,292,594	1,420,460	1,588,372	1,735,218	1,875,413
Other, n.e.c	64,529	72,872	84,679	92,211	117,029	123,424	144,607	153,234
Psychology	49,702	51,233	56,447	63,956	72,737	77,673	82,975	89,089
Social sciences	95,497	102,572	122,971	139,428	149,880	177,465	177,386	185,299
Economics	25,043	26,164	28,967	35,423	43,845	50,209	50,676	48,441
Political science	18,157	18,336	23,005	31,214	34,687	42,351	39,750	45,188
Sociology	23,484	25,968	35,858	38,026	37,869	40,472	38,844	44,479
Other, n.e.c	28,813	32,104	35,141	34,765	33,479	44,433	48,115	47,192
Other sciences, n.e.c	49,099	43,962	43,862	40,664	51,112	63,650	70,509	78,225

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-13. Federally financed R&D expenditures at private universities and colleges, by science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Field	1984	1985	1986	1987	1988	1989	1990	1991
Total	2,311,277	2,573,227	2,870,231	3,161,564	3,478,085	3,785,908	4,008,732	4,173,524
Engineering, total	391,381	430,517	476,790	541,638	557,208	616,000	646,685	673,617
Aeronautical and astronautical	34,154	37,086	42,561	46,565	46,219	54,599	57,201	60,183
Chemical	22,334	23,663	30,331	33,942	36,098	45,793	42,785	46,520
Civil	21,965	24,561	25,530	30,987	34,629	30,635	32,068	33,116
Electrical	108,947	122,496	136,683	151,997	157,455	174,322	189,186	190,192
Mechanical	65,975	70,206	76,059	89,470	90,794	104,878	110,672	107,970
Metallurgical and materials 1/	--	--	--	--	--	--	48,517	49,802
Other, n.e.c	138,006	152,505	165,626	188,677	192,013	205,774	166,255	185,834
All sciences, total	1,919,896	2,142,710	2,393,441	2,619,926	2,920,857	3,169,907	3,362,047	3,499,908
Physical sciences	354,396	401,589	458,806	483,807	528,349	526,749	572,265	599,953
Astronomy	14,765	20,746	24,363	24,409	30,546	32,282	44,039	52,672
Chemistry	110,562	122,828	136,041	145,665	158,579	163,685	176,941	174,987
Physics	190,876	215,913	254,657	265,065	283,090	282,896	296,639	314,527
Other, n.e.c	38,193	42,102	43,745	48,668	56,134	47,886	54,646	57,768
Environmental sciences	145,691	151,015	157,583	168,757	185,311	222,573	218,553	225,460
Atmospheric	20,909	17,567	17,398	17,924	23,190	32,934	30,684	30,684
Earth sciences	47,802	56,452	59,436	63,295	67,489	75,193	80,873	81,796
Oceanography	53,942	55,026	58,292	59,244	62,997	77,448	68,577	72,658
Other, n.e.c	23,038	21,970	22,457	28,294	31,635	36,998	38,419	40,322
Mathematical sciences	51,631	55,561	63,734	71,248	82,573	83,627	82,026	84,063
Computer sciences	108,959	129,868	149,984	165,342	195,051	214,238	216,960	209,299
Life sciences	1,154,145	1,294,791	1,444,753	1,605,720	1,793,957	1,977,574	2,130,334	2,229,979
Agricultural sciences	7,562	8,735	9,979	10,935	10,382	12,061	11,489	12,615
Biological sciences	469,860	515,053	563,918	619,927	697,929	747,668	810,338	837,636
Medical sciences	626,029	716,949	807,713	907,938	1,004,256	1,130,782	1,209,012	1,274,079
Other, n.e.c	50,694	54,054	63,143	66,920	81,390	87,063	99,494	105,649
Psychology	36,276	38,417	42,387	47,837	53,517	57,099	59,938	61,769
Social sciences	48,498	52,831	57,898	59,348	60,587	65,551	58,061	64,097
Economics	10,044	9,799	10,354	11,094	13,610	12,866	10,216	10,365
Political science	7,603	7,409	8,117	11,750	12,560	12,826	11,101	12,584
Sociology	15,369	17,449	21,983	20,844	19,412	21,256	20,670	24,644
Other, n.e.c	15,482	18,174	17,444	15,660	15,005	18,604	16,074	16,504
Other sciences, n.e.c	20,300	18,638	18,296	17,867	21,512	22,495	23,911	25,287

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-14. Non-Federal R&D expenditures at private universities and colleges, by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total non-Federal	724,137	827,759	946,633	1,091,373	1,217,154	1,372,910	1,512,882	1,667,652
Source of funds								
State and local governments	58,258	68,231	83,638	97,064	110,902	125,605	135,535	143,798
Industry	189,472	217,488	259,605	295,567	324,977	361,320	394,633	416,973
Institutional funds	243,516	288,978	318,368	365,359	399,949	450,376	493,681	576,199
All other sources	232,891	253,062	285,022	333,383	381,326	435,610	489,033	530,683
Field								
Engineering, total	104,241	135,174	159,201	183,009	204,853	223,840	245,064	266,001
Aeronautical and astronautical	4,146	5,454	7,386	8,778	9,788	11,811	11,308	11,139
Chemical	14,357	17,008	18,409	22,432	24,163	26,965	28,380	39,204
Civil	10,278	13,382	15,031	15,390	20,320	21,384	22,765	24,596
Electrical	25,901	33,649	40,180	48,302	53,216	61,647	70,193	70,142
Mechanical	20,634	23,596	23,352	28,540	28,906	32,012	36,139	40,936
Metallurgical and materials 1/	--	--	--	--	--	--	28,828	28,997
Other, n.e.c	28,925	42,085	54,843	59,567	68,460	70,022	47,450	50,986
All sciences, total	619,896	692,585	787,432	908,364	1,012,301	1,149,070	1,267,818	1,401,652
Physical sciences	55,722	64,979	74,521	78,029	89,679	101,380	108,918	121,532
Astronomy	8,037	9,540	7,872	7,845	7,857	8,554	11,978	15,099
Chemistry	24,676	30,409	36,277	37,637	44,629	52,382	55,144	55,712
Physics	19,828	21,696	26,800	28,685	32,519	35,634	35,919	41,121
Other, n.e.c	3,181	3,334	3,572	3,862	4,674	4,811	5,877	9,600
Environmental sciences	31,568	31,963	33,831	33,201	39,044	42,812	41,327	44,246
Atmospheric	2,167	1,955	2,429	1,934	3,618	4,128	3,606	3,716
Earth sciences	14,264	13,420	12,739	13,116	14,607	16,168	14,103	16,273
Oceanography	8,334	8,823	8,633	7,022	8,136	8,417	8,260	8,968
Other, n.e.c	6,803	7,765	10,030	11,129	12,683	14,099	15,358	15,289
Mathematical sciences	5,614	5,081	5,137	6,272	8,076	10,299	10,827	11,219
Computer sciences	22,229	28,931	32,095	40,083	43,135	48,830	48,171	52,341
Life sciences	415,539	473,750	537,149	631,783	694,254	772,106	869,615	970,854
Agricultural sciences	23,477	26,809	28,592	29,484	33,280	36,199	36,578	37,686
Biological sciences	131,115	138,550	152,456	192,352	209,131	241,955	261,718	284,249
Medical sciences	247,112	289,573	334,565	384,656	416,204	457,591	526,205	601,334
Other, n.e.c	13,835	18,818	21,536	25,291	35,639	36,361	45,113	47,585
Psychology	13,426	12,816	14,060	16,119	19,220	20,574	23,037	27,320
Social sciences	46,999	49,741	65,073	80,080	89,293	111,914	119,325	121,202
Economics	14,999	16,365	18,613	24,329	30,235	37,343	40,460	38,076
Political science	10,554	10,927	14,888	19,464	22,127	29,525	28,649	32,603
Sociology	8,115	8,519	13,875	17,182	18,457	19,216	18,174	19,835
Other, n.e.c	13,331	13,930	17,697	19,105	18,474	25,829	32,042	30,688
Other sciences, n.e.c	28,799	25,324	25,566	22,797	29,600	41,155	46,598	52,938

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-15. R&D expenditures at doctorate-granting institutions, by source of funds, science and engineering field, and control: fiscal years 1984, 1990, and 1991

[Dollars in thousands]

Source and field	Total			Public			Private		
	1984	1990	1991	1984	1990	1991	1984	1990	1991
Total	8,485,964	16,073,944	17,327,920	5,478,308	10,607,422	11,543,180	3,007,656	5,466,522	5,784,740
Source of funds									
Federal Government	5,342,761	9,478,022	10,052,851	3,048,042	5,504,672	5,914,002	2,294,719	3,973,350	4,138,849
State and local governments	677,520	1,300,282	1,447,736	620,153	1,168,210	1,305,665	57,367	132,072	142,071
Industry	466,391	1,113,255	1,192,376	280,751	723,386	780,645	185,640	389,869	411,731
Institutional funds	1,393,927	2,980,062	3,320,289	1,153,504	2,492,081	2,752,845	240,423	487,981	567,444
All other sources	605,365	1,202,323	1,314,668	375,858	719,073	790,023	229,507	483,250	524,645
Field									
Engineering, total	1,218,898	2,619,461	2,849,838	727,126	1,730,782	1,912,841	491,772	888,679	936,997
Aeronautical and astronautical	67,976	157,570	171,553	29,867	89,061	100,231	38,109	68,509	71,322
Chemical	101,269	213,132	237,341	64,699	142,176	151,971	36,570	70,956	85,370
Civil	137,631	280,553	308,494	106,867	225,792	250,820	30,764	54,761	57,674
Electrical	292,304	656,882	671,179	158,454	398,316	410,946	133,850	258,566	260,233
Mechanical	176,864	384,283	405,668	90,832	239,409	258,776	86,032	144,874	146,892
Metallurgical and materials 1/	--	273,135	299,698	--	195,790	220,899	--	77,345	78,799
Other, n.e.c	442,854	653,906	755,905	276,407	440,238	519,198	166,447	213,868	236,707
All sciences, total	7,267,066	13,454,483	14,478,082	4,751,182	8,876,640	9,630,339	2,515,884	4,577,843	4,847,743
Physical sciences	979,110	1,751,100	1,882,296	575,660	1,084,214	1,178,232	403,450	666,886	704,064
Astronomy	79,768	169,539	209,920	57,209	113,522	142,164	22,559	56,017	67,756
Chemistry	359,074	624,212	639,511	227,304	401,207	418,968	131,770	223,005	220,543
Physics	466,683	813,631	860,894	258,778	486,095	512,188	207,905	327,536	348,706
Other, n.e.c	73,585	143,718	171,971	32,369	83,390	104,912	41,216	60,328	67,059
Environmental sciences	629,940	1,039,222	1,084,074	455,724	786,781	821,664	174,216	252,441	262,410
Atmospheric	99,594	163,905	166,179	78,105	135,082	137,342	21,489	28,823	28,837
Earth sciences	222,895	346,264	371,081	161,511	252,980	274,280	61,384	93,284	96,801
Oceanography	232,432	371,872	384,068	170,771	295,035	302,442	61,661	76,837	81,626
Other, n.e.c	75,019	157,181	162,746	45,337	103,684	107,600	29,682	53,497	55,146
Mathematical sciences	119,043	215,404	221,271	62,637	123,848	127,846	56,406	91,556	93,425
Computer sciences	220,086	501,006	535,563	89,881	237,649	275,529	130,205	263,357	260,034
Life sciences	4,659,692	8,665,595	9,399,362	3,097,373	5,686,669	6,216,601	1,562,319	2,978,926	3,182,761
Agricultural sciences	929,961	1,315,752	1,420,127	898,929	1,269,711	1,371,642	31,032	46,041	48,485
Biological sciences	1,549,197	2,801,713	3,011,726	953,901	1,746,782	1,904,404	595,296	1,054,931	1,107,322
Medical sciences	2,032,170	4,179,574	4,565,988	1,159,804	2,446,023	2,692,026	872,366	1,733,551	1,873,962
Other, n.e.c	148,364	368,556	401,521	84,739	224,153	248,529	63,625	144,403	152,992
Psychology	141,189	243,579	275,416	93,043	162,839	189,302	48,146	80,740	86,114
Social sciences	340,984	684,141	723,487	248,580	508,087	540,387	92,404	176,054	183,100
Economics	103,267	198,318	204,863	78,698	147,753	156,926	24,569	50,565	47,937
Political science	54,457	110,576	120,381	36,606	71,227	75,535	17,851	39,349	44,846
Sociology	65,566	129,087	151,658	43,728	90,727	107,767	21,838	38,360	43,891
Other, n.e.c	117,694	246,160	246,585	89,548	198,380	200,159	28,146	47,780	46,426
Other sciences, n.e.c	177,022	354,436	356,613	128,284	286,553	280,778	48,738	67,883	75,835

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-16. Federally financed R&D expenditures at doctorate-granting institutions, by science and engineering field and control: fiscal years 1984, 1990, and 1991

[Dollars in thousands]

Field	Total			Public			Private		
	1984	1990	1991	1984	1990	1991	1984	1990	1991
Total	5,342,761	9,478,022	10,052,851	3,048,042	5,504,672	5,914,002	2,294,719	3,973,350	4,138,849
Field									
Engineering, total	781,679	1,503,333	1,609,763	392,049	857,805	937,043	389,630	645,528	672,720
Aeronautical and astronautical	53,027	121,515	129,545	19,004	64,314	69,362	34,023	57,201	60,183
Chemical	59,863	106,790	113,767	37,542	64,194	67,601	22,321	42,596	46,166
Civil	71,030	115,218	121,553	50,289	83,222	88,464	20,741	31,996	33,089
Electrical	208,380	428,232	430,478	99,597	239,345	240,307	108,783	188,887	190,171
Mechanical	117,873	234,028	237,285	51,946	123,926	129,810	65,927	110,102	107,475
Metallurgical and materials 1/	--	139,810	153,382	--	91,293	103,580	--	48,517	49,802
Other, n.e.c	271,506	357,740	423,753	133,671	191,511	237,919	137,835	166,229	185,834
All sciences, total	4,561,082	7,974,689	8,443,088	2,655,993	4,646,867	4,976,959	1,905,089	3,327,822	3,466,129
Physical sciences	767,560	1,274,605	1,344,523	417,289	711,798	755,047	350,271	562,807	589,476
Astronomy	52,667	112,121	135,168	38,084	68,082	82,496	14,583	44,039	52,672
Chemistry	270,729	428,674	431,836	161,903	256,914	261,348	108,826	171,760	170,488
Physics	385,025	630,591	662,273	196,334	338,229	353,725	188,691	292,362	308,548
Other, n.e.c	59,139	103,219	115,246	20,968	48,573	57,478	38,171	54,646	57,768
Environmental sciences	435,836	663,436	682,580	291,987	451,139	463,417	143,849	212,297	219,163
Atmospheric	80,018	123,589	123,538	60,695	98,372	98,417	19,323	25,217	25,121
Earth sciences	137,544	200,358	213,025	89,952	120,224	131,522	47,592	80,134	81,503
Oceanography	178,361	258,958	260,416	124,449	190,381	187,758	53,912	68,577	72,658
Other, n.e.c	39,913	80,531	85,601	16,891	42,162	45,720	23,022	38,369	39,881
Mathematical sciences	90,102	156,327	164,431	38,801	75,015	81,560	51,301	81,312	82,871
Computer sciences	160,660	336,278	361,249	52,083	120,546	153,321	108,577	215,732	207,928
Life sciences	2,792,679	5,015,495	5,343,599	1,643,490	2,898,808	3,125,379	1,149,189	2,116,687	2,218,220
Agricultural sciences	249,458	325,391	350,587	241,897	315,868	339,720	7,561	9,523	10,867
Biological sciences	1,077,194	1,809,106	1,922,657	611,020	1,009,149	1,093,952	466,174	799,957	828,705
Medical sciences	1,373,059	2,663,576	2,829,097	747,479	1,455,788	1,555,984	625,580	1,207,788	1,273,113
Other, n.e.c	92,968	217,422	241,258	43,094	118,003	135,723	49,874	99,419	105,535
Psychology	95,224	156,820	179,600	60,159	98,516	119,794	35,065	58,304	59,806
Social sciences	133,734	218,668	241,282	87,002	160,752	177,626	46,732	57,916	63,656
Economics	38,315	53,092	57,055	28,460	42,896	46,695	9,855	10,196	10,360
Political science	18,184	24,729	28,568	10,736	13,659	16,059	7,448	11,070	12,509
Sociology	35,603	58,107	69,818	21,384	37,486	45,510	14,219	20,641	24,308
Other, n.e.c	41,632	82,740	85,841	26,422	66,731	69,362	15,210	16,009	16,479
Other sciences, n.e.c	85,287	153,060	125,824	65,182	130,293	100,815	20,105	22,767	25,009

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-17. Non-Federal R&D expenditures at doctorate-granting institutions, by source of funds, science and engineering field, and control: fiscal years 1984, 1990, and 1991

[Dollars in thousands]

Source and field	Total			Public			Private		
	1984	1990	1991	1984	1990	1991	1984	1990	1991
Total non-Federal	3,143,203	6,595,922	7,275,069	2,430,266	5,102,750	5,629,178	712,937	1,493,172	1,645,891
Source of funds									
State and local governments	677,520	1,300,282	1,447,736	620,153	1,168,210	1,305,665	57,367	132,072	142,071
Industry	466,391	1,113,255	1,192,376	280,751	723,386	780,645	185,640	389,869	411,731
Institutional funds	1,393,927	2,980,062	3,320,289	1,153,504	2,492,081	2,752,845	240,423	487,981	567,444
All other sources	605,365	1,202,323	1,314,668	375,858	719,073	790,023	229,507	483,250	524,645
Field									
Engineering, total	437,219	1,116,128	1,240,075	335,077	872,977	975,798	102,142	243,151	264,277
Aeronautical and astronautical	14,949	36,055	42,008	10,863	24,747	30,869	4,086	11,308	11,139
Chemical	41,406	106,342	123,574	27,157	77,982	84,370	14,249	28,360	39,204
Civil	66,601	165,335	186,941	56,578	142,570	162,356	10,023	22,765	24,585
Electrical	83,924	228,650	240,701	58,857	158,971	170,639	25,067	69,679	70,062
Mechanical	58,991	150,255	168,383	38,886	115,483	128,966	20,105	34,772	39,417
Metallurgical and materials 1/	--	133,325	146,316	--	104,497	117,319	--	28,828	28,997
Other, n.e.c	171,348	296,166	332,152	142,736	248,727	281,279	28,612	47,439	50,873
All sciences, total	2,705,984	5,479,794	6,034,994	2,095,189	4,229,773	4,653,380	610,795	1,250,021	1,381,614
Physical sciences	211,550	476,495	537,773	158,371	372,416	423,185	53,179	104,079	114,588
Astronomy	27,101	57,418	74,752	19,125	45,440	59,668	7,976	11,978	15,084
Chemistry	88,345	195,538	207,675	65,401	144,293	157,620	22,944	51,245	50,055
Physics	81,658	183,040	198,621	62,444	147,866	158,463	19,214	35,174	40,158
Other, n.e.c	14,446	40,499	56,725	11,401	34,817	47,434	3,045	5,682	9,291
Environmental sciences	194,104	375,786	401,494	163,737	335,642	358,247	30,367	40,144	43,247
Atmospheric	19,576	40,316	42,641	17,410	36,710	38,925	2,166	3,606	3,716
Earth sciences	85,351	145,906	158,056	71,559	132,756	142,758	13,792	13,150	15,298
Oceanography	54,071	112,914	123,652	46,322	104,654	114,684	7,749	8,260	8,968
Other, n.e.c	35,106	76,650	77,145	28,446	61,522	61,880	6,660	15,128	15,265
Mathematical sciences	28,941	59,077	56,840	23,836	48,833	46,286	5,105	10,244	10,554
Computer sciences	59,426	164,728	174,314	37,798	117,103	122,208	21,628	47,625	52,106
Life sciences	1,867,013	3,650,100	4,055,763	1,453,883	2,787,861	3,091,222	413,130	862,239	964,541
Agricultural sciences	680,503	990,361	1,069,540	657,032	953,843	1,031,922	23,471	36,518	37,618
Biological sciences	472,003	992,607	1,089,069	342,881	737,633	810,452	129,122	254,974	278,617
Medical sciences	659,111	1,515,998	1,736,891	412,325	990,235	1,136,042	246,786	525,763	600,849
Other, n.e.c	55,396	151,134	160,263	41,645	106,150	112,806	13,751	44,984	47,457
Psychology	45,965	86,759	95,816	32,884	64,323	69,508	13,081	22,436	26,308
Social sciences	207,250	465,473	482,205	161,578	347,335	362,761	45,672	118,138	119,444
Economics	64,952	145,226	147,808	50,238	104,857	110,231	14,714	40,369	37,577
Political science	36,273	85,847	91,813	25,870	57,568	59,476	10,403	28,279	32,337
Sociology	29,963	70,980	81,840	22,344	53,261	62,257	7,619	17,719	19,583
Other, n.e.c	76,062	163,420	160,744	63,126	131,649	130,797	12,936	31,771	29,947
Other sciences, n.e.c	91,735	201,376	230,789	63,102	156,260	179,963	28,633	45,116	50,826

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-18. R&D expenditures at historically black colleges and universities, by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total	61,074	62,725	71,832	73,759	92,458	123,591	139,186	150,729
Source of funds								
Federal Government	54,130	57,725	60,665	61,230	75,625	100,973	114,663	122,110
State and local governments	826	1,150	1,163	2,528	4,475	6,883	7,588	7,115
Industry	809	1,371	1,746	1,555	3,162	3,668	5,166	3,098
Institutional funds	3,661	1,579	6,722	7,182	7,476	10,858	9,855	13,548
All other sources	1,648	900	1,536	1,264	1,720	1,211	1,914	4,858
Field								
Engineering, total	3,978	5,077	6,898	6,400	7,814	10,529	13,645	16,889
Aeronautical and astronautical	266	250	263	371	410	226	119	170
Chemical	94	140	220	184	607	660	1,014	1,171
Civil	627	191	134	906	1,340	1,198	1,022	1,231
Electrical	1,689	1,119	1,467	2,123	1,915	2,763	2,530	4,133
Mechanical	592	1,002	1,619	1,912	2,224	3,108	3,412	4,484
Metallurgical and materials 1/	--	--	--	--	--	--	1,375	1,345
Other, n.e.c	710	2,375	3,195	904	1,318	2,574	4,173	4,355
All sciences, total	57,096	57,648	64,934	67,359	84,644	113,062	125,541	133,840
Physical sciences	10,718	11,952	13,783	14,089	14,672	17,664	23,943	25,938
Astronomy	68	16	26	12	27	0	0	164
Chemistry	7,577	7,693	9,051	7,875	9,321	9,879	11,196	12,263
Physics	2,888	3,970	4,473	6,074	5,323	7,619	12,514	13,047
Other, n.e.c	185	273	233	128	1	166	233	464
Environmental sciences	693	1,173	1,104	1,229	1,362	1,446	3,699	4,014
Atmospheric	22	21	0	0	3	388	625	542
Earth sciences	191	350	286	303	328	526	461	304
Oceanography	133	305	381	208	397	27	48	23
Other, n.e.c	347	497	437	718	634	505	2,565	3,145
Mathematical sciences	986	974	1,501	371	311	688	905	1,574
Computer sciences	295	493	629	957	1,290	2,386	2,496	5,276
Life sciences	37,903	38,472	41,587	43,901	56,948	80,241	83,479	90,893
Agricultural sciences	18,911	18,156	18,960	18,495	22,100	34,060	33,940	39,305
Biological sciences	13,579	12,534	12,593	15,838	24,990	34,041	37,009	38,683
Medical sciences	2,194	7,089	9,215	8,514	8,998	11,024	11,765	10,555
Other, n.e.c	3,219	693	819	1,054	860	1,116	765	2,350
Psychology	58	221	352	628	494	1,494	1,706	1,626
Social sciences	5,879	3,822	5,017	4,591	8,639	7,973	7,839	3,296
Economics	3,920	1,310	634	290	838	864	1,528	841
Political science	662	934	994	728	1,169	1,156	978	140
Sociology	919	955	999	675	2,088	1,658	2,064	1,566
Other, n.e.c	378	623	2,390	2,898	4,544	4,295	3,269	749
Other sciences, n.e.c	564	541	961	1,593	928	1,170	1,474	1,223

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-19. Federally financed R&D expenditures at historically black colleges and universities, by science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Field	1984	1985	1986	1987	1988	1989	1990	1991
Total	54,130	57,725	60,665	61,230	75,625	100,973	114,663	122,110
Field								
Engineering, total	3,247	4,372	4,911	4,331	5,665	8,008	11,839	12,295
Aeronautical and astronautical	258	243	256	350	382	123	119	170
Chemical	84	140	158	123	554	586	747	791
Civil	577	184	130	585	811	880	647	278
Electrical	1,498	962	1,031	1,381	1,358	1,906	2,075	3,173
Mechanical	457	878	1,279	1,480	1,964	2,787	3,106	3,616
Metallurgical and materials 1/	--	--	--	--	--	--	1,375	1,178
Other, n.e.c	373	1,965	2,057	412	596	1,726	3,770	3,089
All sciences, total	50,883	53,353	55,754	56,899	69,960	92,965	102,824	109,815
Physical sciences	9,797	11,082	11,583	12,410	12,665	14,978	20,073	21,879
Astronomy	66	16	26	12	27	0	0	164
Chemistry	6,885	7,116	7,163	6,516	7,821	8,553	9,781	10,800
Physics	2,661	3,750	4,161	5,754	4,816	6,302	10,123	10,507
Other, n.e.c	185	200	233	128	1	123	169	408
Environmental sciences	442	867	822	883	1,079	793	1,202	2,066
Atmospheric	17	19	0	0	3	129	105	104
Earth sciences	151	316	245	239	250	248	252	138
Oceanography	124	297	348	206	372	2	22	0
Other, n.e.c	150	235	229	438	454	414	823	1,824
Mathematical sciences	412	941	1,012	329	255	446	633	1,281
Computer sciences	288	480	582	863	1,155	1,997	1,886	4,523
Life sciences	34,022	36,072	36,331	38,093	49,648	69,071	72,166	76,261
Agricultural sciences	17,534	16,959	17,739	16,731	20,991	30,336	29,863	34,507
Biological sciences	11,893	12,042	11,388	14,261	21,161	29,458	32,700	33,940
Medical sciences	1,804	6,409	6,431	6,065	6,641	8,902	9,338	6,849
Other, n.e.c	2,791	662	773	1,036	855	375	265	965
Psychology	52	213	343	589	452	1,108	1,240	1,270
Social sciences	5,371	3,185	4,170	2,276	3,974	3,625	4,897	2,153
Economics	3,783	1,247	522	203	548	755	1,296	786
Political science	541	724	708	376	451	557	424	71
Sociology	890	790	788	188	214	427	632	792
Other, n.e.c	157	424	2,152	1,509	2,761	1,886	2,545	504
Other sciences, n.e.c	499	513	911	1,456	732	947	727	382

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-20. Non-Federal R&D expenditures at historically black colleges and universities, by source of funds and science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Source and field	1984	1985	1986	1987	1988	1989	1990	1991
Total non-Federal	6,944	5,000	11,167	12,529	16,833	22,618	24,523	28,619
Source of funds								
State and local governments	826	1,150	1,163	2,528	4,475	6,883	7,588	7,115
Industry	809	1,371	1,746	1,555	3,162	3,666	5,166	3,098
Institutional funds	3,661	1,579	6,722	7,182	7,476	10,858	9,855	13,548
All other sources	1,648	900	1,536	1,264	1,720	1,211	1,914	4,858
Field								
Engineering, total	731	705	1,987	2,069	2,149	2,521	1,806	4,594
Aeronautical and astronautical	8	7	7	21	28	103	0	0
Chemical	10	0	62	61	53	74	267	380
Civil	50	7	4	321	529	318	375	953
Electrical	191	157	436	742	557	857	455	960
Mechanical	135	124	340	432	260	321	306	868
Metallurgical and materials 1/	--	--	--	--	--	--	0	167
Other, n.e.c	337	410	1,138	492	722	848	403	1,266
All sciences, total	6,213	4,295	9,180	10,460	14,684	20,097	22,717	24,025
Physical sciences	921	870	2,200	1,679	2,007	2,686	3,870	4,059
Astronomy	2	0	0	0	0	0	0	0
Chemistry	692	577	1,888	1,359	1,500	1,326	1,415	1,463
Physics	227	220	312	320	507	1,317	2,391	2,540
Other, n.e.c	0	73	0	0	0	43	64	56
Environmental sciences	251	308	282	346	283	653	2,497	1,948
Atmospheric	5	2	0	0	0	259	520	438
Earth sciences	40	34	41	64	78	278	209	166
Oceanography	9	8	33	2	25	25	26	23
Other, n.e.c	197	262	208	280	180	91	1,742	1,321
Mathematical sciences	574	33	489	42	56	242	272	293
Computer sciences	7	13	47	94	135	389	610	753
Life sciences	3,881	2,400	5,256	5,808	7,300	11,170	11,313	14,632
Agricultural sciences	1,377	1,197	1,221	1,764	1,109	3,724	4,077	4,798
Biological sciences	1,686	492	1,205	1,577	3,829	4,583	4,309	4,743
Medical sciences	390	680	2,784	2,449	2,357	2,122	2,427	3,706
Other, n.e.c	428	31	46	18	5	741	500	1,385
Psychology	6	8	9	39	42	386	466	356
Social sciences	508	637	847	2,315	4,665	4,348	2,942	1,143
Economics	137	63	112	87	290	109	232	55
Political science	121	210	286	352	718	599	554	69
Sociology	29	165	211	487	1,874	1,231	1,432	774
Other, n.e.c	221	199	238	1,389	1,783	2,409	724	245
Other sciences, n.e.c	65	28	50	137	196	223	747	841

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-21. R&D expenditures at universities and colleges, by geographic division and source: fiscal year 1991

[Dollars in millions]

Division	Total	Federal	Non-Federal
Total	17,620	10,221	7,400
New England	1,519	1,039	480
Middle Atlantic	2,725	1,655	1,069
East North Central	2,472	1,324	1,149
West North Central	1,207	573	635
South Atlantic	3,260	1,944	1,316
East South Central	706	383	323
West South Central	1,701	731	970
Mountain	1,082	629	452
Pacific	2,898	1,916	982
Outlying Areas	50	26	24

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-22. R&D expenditures at doctorate-granting institutions, by geographic division, State, and source of funds: fiscal year 1991

[Dollars in thousands]

Division and State	Total	Federal Government	State and local governments	Industry	Institu-tional funds	All other sources
Total	17,327,920	10,052,851	1,447,736	1,192,376	3,320,289	1,314,668
New England	1,506,651	1,029,002	33,906	123,632	179,603	140,508
Connecticut	316,667	197,120	5,996	16,121	69,510	27,920
Maine	27,062	10,062	2,197	4,719	9,504	600
Massachusetts	948,938	678,511	13,201	90,905	66,449	99,872
New Hampshire	78,975	52,633	4,375	3,997	10,225	7,545
Rhode Island	88,448	59,616	5,278	3,709	17,520	2,325
Vermont	46,541	30,860	2,859	4,181	6,395	2,246
Middle Atlantic	2,688,772	1,634,279	146,682	204,942	437,460	265,409
New Jersey	342,564	147,644	43,361	19,494	106,819	25,246
New York	1,467,204	933,968	76,616	85,287	191,062	180,271
Pennsylvania	879,004	552,667	26,705	100,161	139,579	59,892
East North Central	2,456,663	1,317,398	230,365	175,746	523,919	209,235
Illinois	701,620	361,664	52,573	49,583	180,807	56,993
Indiana	262,508	143,761	20,347	19,726	61,425	17,249
Michigan	601,189	309,592	39,980	49,774	155,400	46,443
Ohio	503,725	284,791	53,079	37,948	73,765	54,142
Wisconsin	387,621	217,590	64,386	18,715	52,522	34,408
West North Central	1,191,348	566,623	179,172	83,472	281,767	80,314
Iowa	259,437	123,858	34,147	14,372	74,471	12,589
Kansas	124,174	43,913	28,967	7,292	39,897	4,105
Minnesota	331,471	164,887	53,614	19,270	60,904	32,796
Missouri	305,780	165,099	19,061	30,195	67,335	24,090
Nebraska	123,711	40,597	35,817	9,725	32,900	4,672
North Dakota	30,816	21,352	1,027	2,308	4,740	1,389
South Dakota	15,959	6,917	6,539	310	1,520	673
South Atlantic	3,204,926	1,907,486	309,540	240,997	602,427	144,476
Delaware	44,696	20,053	4,024	4,732	12,724	3,163
District of Columbia	118,398	86,793	463	7,279	12,718	11,145
Florida	438,054	220,683	36,736	35,690	116,339	28,606
Georgia	484,019	238,032	43,222	39,882	149,775	13,108
Maryland	1,078,068	784,584	61,956	39,915	139,720	31,893
North Carolina	501,841	303,921	71,990	55,079	51,758	19,093
South Carolina	151,204	54,045	16,858	15,903	54,011	10,387
Virginia	337,874	178,896	52,727	31,347	52,191	22,713
West Virginia	50,772	20,479	1,564	11,170	13,191	4,368
East South Central	679,415	359,567	86,191	52,147	136,902	44,608
Alabama	244,901	125,184	26,256	20,348	52,460	20,653
Kentucky	97,989	38,386	6,122	10,569	38,008	4,904
Mississippi	96,471	49,424	20,886	8,879	11,662	5,620
Tennessee	240,054	146,573	32,927	12,351	34,772	13,431
West South Central	1,662,761	712,376	228,737	111,130	418,621	191,897
Arkansas	55,081	20,178	13,958	4,514	12,945	3,486
Louisiana	239,533	98,834	62,167	15,539	48,024	14,969
Oklahoma	152,624	42,808	13,593	8,559	74,265	13,401
Texas	1,215,523	550,558	139,019	82,518	283,387	160,041
Mountain	1,079,816	629,240	74,242	76,836	242,869	56,629
Arizona	284,128	131,627	7,945	19,519	109,028	16,009
Colorado	262,031	186,134	13,033	17,523	25,037	20,304
Idaho	41,437	15,661	8,604	5,050	11,697	405
Montana	38,149	13,801	8,864	4,406	10,820	238
Nevada	66,742	38,221	2,608	5,323	19,675	915
New Mexico	162,850	93,381	14,564	16,135	26,593	12,077
Utah	201,470	137,613	16,756	6,880	33,779	6,442
Wyoming	23,009	12,782	1,848	2,000	6,140	239
Pacific	2,811,821	1,873,255	150,414	123,135	485,658	179,359
Alaska	67,432	34,335	1,926	1,547	28,246	1,378
California	2,137,216	1,431,833	84,069	85,779	387,313	148,202
Hawaii	78,166	44,857	27,321	856	3,391	1,741
Oregon	179,340	108,849	25,727	6,846	21,479	16,439
Washington	349,667	253,381	11,351	28,107	45,229	11,599
Outlying Areas	45,747	23,625	8,487	339	11,063	2,233

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-23. R&D expenditures at doctorate-granting institutions, by geographic division and State: fiscal years 1984-91

[Dollars in thousands]

Division and State	1984	1985	1986	1987	1988	1989	1990	1991
Total	8,485,984	9,543,497	10,770,853	11,997,310	13,288,592	14,768,678	16,073,944	17,327,920
New England	851,745	948,319	1,039,272	1,115,314	1,234,706	1,356,621	1,418,012	1,506,651
Connecticut	176,843	194,928	212,815	230,790	254,958	284,410	298,076	316,667
Maine	17,107	20,621	19,315	16,952	17,341	19,974	23,605	27,082
Massachusetts	554,387	608,887	673,378	719,581	790,391	867,521	898,804	948,938
New Hampshire	31,865	39,680	44,330	50,928	57,658	62,172	69,731	78,975
Rhode Island	49,275	56,597	59,735	65,516	77,543	79,801	82,634	88,448
Vermont	22,268	27,606	29,699	31,547	36,815	42,743	45,162	46,541
Middle Atlantic	1,346,100	1,539,058	1,765,124	1,954,035	2,164,553	2,374,779	2,558,203	2,688,772
New Jersey	122,102	141,476	180,841	214,696	243,271	281,890	318,468	342,564
New York	822,091	938,944	1,037,116	1,127,404	1,246,170	1,331,759	1,410,217	1,467,204
Pennsylvania	401,907	458,638	547,167	611,935	675,112	761,130	829,518	879,004
East North Central	1,229,483	1,353,557	1,509,138	1,709,481	1,897,912	2,081,176	2,235,583	2,456,663
Illinois	357,285	392,793	438,991	498,221	546,300	602,558	646,927	701,620
Indiana	144,994	158,983	176,374	188,086	211,813	227,266	240,696	262,508
Michigan	283,643	301,235	341,775	398,420	438,420	487,192	527,407	601,189
Ohio	231,339	261,445	287,601	329,343	381,895	427,345	457,189	503,725
Wisconsin	212,222	239,101	264,397	297,411	319,484	336,815	363,364	387,621
West North Central	588,929	646,013	738,470	801,223	869,292	964,779	1,072,851	1,191,348
Iowa	119,272	132,251	146,312	157,539	181,481	209,394	232,472	259,437
Kansas	71,348	80,144	90,579	93,931	99,655	107,856	114,651	124,174
Minnesota	158,223	173,322	201,743	222,381	236,115	258,614	292,046	331,471
Missouri	150,414	160,985	185,935	205,597	232,148	255,009	285,003	305,780
Nebraska	53,688	60,503	71,088	74,468	83,122	93,506	104,371	123,711
North Dakota	27,459	29,649	31,840	35,912	24,444	27,951	29,966	30,816
South Dakota	8,525	9,159	10,973	11,395	12,327	12,449	14,342	15,959
South Atlantic	1,380,470	1,578,252	1,808,052	2,092,596	2,327,345	2,728,460	2,969,432	3,204,926
Delaware	21,343	23,605	28,798	31,681	32,023	37,194	40,119	44,696
District of Columbia	62,212	64,692	73,170	85,470	94,851	111,325	112,146	118,398
Florida	184,723	203,385	228,077	278,847	298,933	385,556	433,413	438,054
Georgia	217,197	231,068	290,291	329,937	371,360	417,287	449,338	484,019
Maryland	472,226	540,242	605,017	722,393	795,718	921,848	977,593	1,078,068
North Carolina	208,582	254,370	281,929	313,819	366,995	419,848	441,860	501,841
South Carolina	59,528	68,768	86,603	95,811	102,160	120,137	137,269	151,204
Virginia	134,480	169,738	189,876	207,934	234,887	275,897	329,666	337,874
West Virginia	20,181	22,384	24,291	26,704	30,418	39,368	48,028	50,772
East South Central	285,179	327,700	394,527	443,718	523,249	572,766	637,640	679,415
Alabama	86,542	104,137	133,410	152,925	180,809	209,564	239,556	244,901
Kentucky	52,647	53,790	68,552	78,008	91,948	83,998	90,880	97,989
Mississippi	49,371	52,618	59,223	57,622	63,647	75,175	85,229	96,471
Tennessee	96,619	117,155	133,342	155,163	186,845	204,029	221,975	240,054
West South Central	779,166	884,827	981,094	1,093,236	1,209,435	1,351,243	1,510,818	1,682,761
Arkansas	26,616	30,051	35,379	35,529	37,955	43,676	48,861	55,081
Louisiana	103,656	125,478	134,200	148,563	165,623	180,032	207,509	239,533
Oklahoma	91,386	96,407	89,020	99,363	113,931	113,279	130,650	152,624
Texas	557,508	632,891	722,495	809,781	891,926	1,014,256	1,123,798	1,215,523
Mountain	524,510	583,082	661,287	719,575	798,533	885,912	998,476	1,079,816
Arizona	118,818	136,835	160,678	181,263	199,178	223,834	261,384	284,128
Colorado	149,494	158,785	175,760	185,699	206,287	226,555	249,958	262,031
Idaho	19,626	20,861	23,729	24,779	30,789	33,191	36,570	41,437
Montana	24,198	24,327	26,438	29,425	32,069	32,450	34,980	38,149
Nevada	17,513	20,499	24,535	28,070	32,665	45,555	53,750	66,742
New Mexico	84,429	104,988	118,569	132,145	129,087	136,189	151,927	162,850
Utah	94,697	100,712	112,915	120,878	146,029	164,828	187,076	201,470
Wyoming	15,735	16,075	18,663	17,316	20,429	23,310	22,831	23,009
Pacific	1,471,899	1,851,495	1,838,812	2,030,817	2,226,572	2,411,001	2,628,858	2,811,821
Alaska	40,160	42,584	45,008	47,432	49,856	56,701	65,571	67,432
California	1,092,604	1,230,895	1,379,262	1,554,787	1,722,075	1,845,555	2,003,043	2,137,216
Hawaii	51,051	54,025	57,383	57,345	64,278	70,733	76,525	78,166
Oregon	102,833	114,151	124,195	135,326	148,309	161,127	171,550	179,340
Washington	185,251	209,840	232,964	235,927	242,054	276,885	312,169	349,667
Outlying Areas	28,483	31,194	35,077	37,315	38,995	41,941	44,071	45,747

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-24. Federally financed R&D expenditures at doctorate-granting institutions, by geographic division and State: fiscal years 1984-91

[Dollars in thousands]

Division and State	1984	1985	1986	1987	1988	1989	1990	1991
Total	5,342,761	5,989,330	6,607,795	7,243,809	8,079,993	8,844,360	9,478,022	10,052,851
New England	643,579	702,600	754,047	808,738	884,476	944,086	981,113	1,029,002
Connecticut	133,433	139,748	145,583	155,717	173,912	187,212	190,388	197,120
Maine	8,444	10,653	8,584	7,787	7,048	8,288	9,046	10,062
Massachusetts	422,571	463,575	504,837	536,999	580,783	621,789	649,104	678,511
New Hampshire	21,824	26,445	29,929	34,633	39,077	41,816	44,590	52,833
Rhode Island	42,375	43,222	45,266	51,313	58,117	56,446	57,430	59,616
Vermont	14,932	18,957	19,848	22,289	25,539	28,535	30,555	30,860
Middle Atlantic	903,002	1,016,644	1,138,354	1,251,171	1,365,938	1,452,992	1,566,801	1,634,279
New Jersey	65,758	75,392	82,681	95,294	105,738	117,237	133,959	147,844
New York	564,892	638,759	713,836	769,965	832,785	866,762	917,748	933,968
Pennsylvania	272,352	302,493	341,837	385,912	427,415	468,993	515,094	552,667
East North Central	747,553	814,086	889,256	976,900	1,095,494	1,178,005	1,233,380	1,317,398
Illinois	223,090	240,113	258,845	293,929	315,809	338,082	352,786	361,664
Indiana	86,470	97,004	106,979	111,413	130,777	136,040	134,953	143,761
Michigan	165,661	175,168	186,844	207,709	242,768	263,506	276,078	309,592
Ohio	145,823	161,055	177,596	193,614	217,622	242,559	260,537	284,791
Wisconsin	126,509	140,746	156,992	170,235	188,520	197,818	209,026	217,590
West North Central	291,922	314,103	354,914	390,239	431,767	482,532	514,812	566,623
Iowa	62,252	64,133	69,932	76,915	87,855	103,360	113,268	123,858
Kansas	29,156	31,088	35,552	37,386	42,402	44,292	43,478	43,913
Minnesota	79,489	87,776	100,306	109,003	119,789	132,880	143,810	164,887
Missouri	86,759	92,544	102,592	113,146	124,552	139,677	152,398	165,099
Nebraska	19,702	24,670	28,679	33,275	35,041	36,761	34,169	40,597
North Dakota	10,526	11,628	12,729	15,385	16,285	19,396	20,815	21,352
South Dakota	4,038	2,264	5,122	5,129	5,843	6,166	6,874	6,917
South Atlantic	908,338	1,014,345	1,145,399	1,290,980	1,448,001	1,678,141	1,782,839	1,907,486
Delaware	10,811	10,626	12,578	13,662	13,708	17,083	17,588	20,053
District of Columbia	47,851	49,497	53,933	62,968	70,850	84,274	86,292	86,793
Florida	91,545	100,547	116,349	129,474	151,012	200,742	223,232	220,683
Georgia	111,312	116,570	136,997	151,025	180,102	204,673	215,712	238,032
Maryland	393,938	440,431	495,742	575,176	617,993	705,963	724,468	784,584
North Carolina	134,176	156,591	177,301	195,177	229,191	261,896	276,795	303,921
South Carolina	24,040	29,857	31,963	34,350	39,759	41,627	45,718	54,045
Virginia	83,668	97,874	107,005	116,137	129,450	144,544	170,128	178,896
West Virginia	10,997	12,352	13,531	13,011	15,936	17,339	22,906	20,479
East South Central	146,182	166,432	192,418	222,682	269,271	304,223	340,193	359,567
Alabama	50,098	60,558	69,993	85,382	104,259	114,892	124,648	125,184
Kentucky	19,317	19,241	24,963	30,778	33,162	32,963	38,249	38,386
Mississippi	17,815	19,053	21,878	22,492	25,357	32,123	40,343	49,424
Tennessee	58,952	67,580	75,584	84,030	106,493	124,245	136,953	146,573
West South Central	345,134	412,922	452,919	495,789	561,514	604,636	659,861	712,376
Arkansas	10,004	11,551	12,385	12,257	14,039	14,213	17,485	20,178
Louisiana	34,164	41,677	47,497	54,367	60,963	69,219	83,213	98,834
Oklahoma	25,965	30,420	24,290	25,880	31,391	33,067	37,020	42,806
Texas	275,001	329,274	368,747	403,285	455,121	488,137	522,143	550,558
Mountain	317,142	358,505	398,030	417,796	472,406	522,768	587,650	629,240
Arizona	57,183	65,483	76,615	80,955	94,630	105,367	122,259	131,627
Colorado	99,713	112,167	125,715	136,003	152,091	167,043	179,978	186,134
Idaho	12,987	13,963	9,328	8,988	11,196	12,585	14,361	15,681
Montana	7,383	9,163	9,082	11,299	13,635	11,552	12,520	13,801
Nevada	10,706	11,614	13,265	14,572	18,077	26,587	33,959	38,221
New Mexico	57,154	68,166	76,334	75,923	73,835	76,777	85,747	93,381
Utah	64,336	70,517	78,370	81,355	97,806	109,053	126,619	137,613
Wyoming	7,700	7,452	9,321	8,701	11,136	13,804	12,207	12,782
Pacific	1,025,517	1,153,973	1,264,346	1,370,484	1,528,784	1,652,859	1,786,960	1,873,255
Alaska	15,775	17,691	19,607	21,523	23,441	26,659	31,896	34,335
California	779,050	876,737	973,989	1,066,099	1,195,035	1,281,335	1,374,696	1,431,833
Hawaii	32,701	34,886	35,322	34,472	38,560	40,574	42,665	44,857
Oregon	65,298	68,262	73,360	81,932	90,126	99,141	107,466	108,849
Washington	132,693	156,397	162,068	166,458	181,622	205,150	230,237	253,381
Outlying Areas	14,392	15,720	18,112	19,030	22,342	24,118	24,413	23,625

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-25. State and local government-financed R&D expenditures at doctorate-granting institutions, by geographic division and State: fiscal years 1984-91

[Dollars in thousands]

Division and State	1984	1985	1986	1987	1988	1989	1990	1991
Total	677,520	738,509	899,952	1,005,933	1,088,452	1,202,960	1,300,282	1,447,736
New England	15,582	16,936	26,436	27,186	32,948	32,965	31,743	33,906
Connecticut	3,790	3,602	4,361	2,495	4,013	5,430	5,262	5,996
Maine	1,587	1,246	796	315	543	584	908	2,197
Massachusetts	5,279	7,001	14,419	18,390	20,672	16,529	14,080	13,201
New Hampshire	2,445	2,680	3,384	2,045	2,536	2,646	3,985	4,375
Rhode Island	947	833	1,547	2,136	2,886	3,276	5,119	5,278
Vermont	1,534	1,574	1,929	1,805	2,298	2,500	2,389	2,859
Middle Atlantic	55,811	73,079	95,129	115,009	123,986	146,507	152,948	146,682
New Jersey	11,297	16,637	28,093	37,489	36,815	45,150	46,278	43,361
New York	35,485	42,731	47,625	53,961	61,593	69,072	75,518	76,616
Pennsylvania	9,029	13,711	19,411	23,559	25,578	32,285	31,152	26,705
East North Central	109,721	115,799	139,210	161,540	181,083	192,219	199,653	230,365
Illinois	21,008	23,793	29,068	30,610	29,329	33,681	38,023	52,573
Indiana	10,928	12,155	17,478	15,772	16,813	18,911	19,449	20,347
Michigan	23,458	23,940	25,976	30,320	33,471	35,983	36,747	39,980
Ohio	15,716	15,304	20,650	35,038	47,437	48,072	46,349	53,079
Wisconsin	38,611	40,607	46,038	49,800	54,033	55,372	59,085	64,386
West North Central	87,910	97,797	110,032	120,367	117,197	134,798	155,629	179,172
Iowa	17,232	13,387	13,655	16,653	20,495	24,839	29,500	34,147
Kansas	18,104	21,031	19,721	20,031	21,092	24,159	25,523	28,967
Minnesota	16,123	19,439	31,819	37,287	39,297	42,542	47,437	53,614
Missouri	9,242	10,758	11,397	11,753	13,050	14,509	18,469	19,061
Nebraska	14,520	14,670	15,988	16,123	17,468	22,926	27,860	35,817
North Dakota	12,291	12,835	13,254	13,731	713	918	1,061	1,027
South Dakota	398	5,677	4,198	4,789	5,082	4,905	5,779	6,539
South Atlantic	120,905	152,372	182,030	212,643	235,919	262,378	289,755	309,540
Delaware	348	767	1,645	1,995	2,456	2,603	3,139	4,024
District of Columbia	233	353	289	484	264	480	465	463
Florida	7,264	7,639	9,994	13,889	19,498	25,655	33,305	36,736
Georgia	22,041	24,394	33,372	39,621	40,161	40,141	42,638	43,222
Maryland	29,138	34,130	38,724	50,425	56,630	64,063	72,022	81,956
North Carolina	33,502	48,193	48,926	54,897	58,048	61,259	64,923	71,990
South Carolina	10,558	11,057	14,598	14,061	15,594	17,421	17,384	16,858
Virginia	16,617	24,512	33,695	36,400	42,196	49,501	54,680	52,727
West Virginia	1,204	1,327	787	871	1,070	1,255	1,199	1,564
East South Central	50,168	60,147	77,359	71,992	82,325	77,303	83,475	86,191
Alabama	9,972	15,461	22,412	16,449	21,263	18,339	25,752	26,256
Kentucky	12,510	11,278	11,588	10,841	13,169	7,113	6,684	6,122
Mississippi	16,399	16,730	21,375	16,667	18,992	20,486	20,745	20,886
Tennessee	11,287	16,678	21,984	28,035	28,901	31,365	30,294	32,927
West South Central	107,258	109,800	131,001	136,685	152,372	181,811	193,867	228,737
Arkansas	6,800	7,767	9,390	9,352	9,701	12,186	11,826	13,958
Louisiana	30,355	31,592	32,218	31,850	38,556	40,758	43,700	62,167
Oklahoma	3,423	2,788	2,663	3,463	4,670	5,062	7,665	13,593
Texas	66,680	67,633	86,730	92,020	99,445	123,805	130,676	139,019
Mountain	46,668	49,064	58,849	66,861	64,662	70,675	72,077	74,242
Arizona	6,192	7,671	8,024	8,965	5,486	7,949	7,318	7,945
Colorado	9,230	6,301	6,762	8,771	9,334	10,679	11,637	13,033
Idaho	2,093	1,885	6,187	8,314	10,507	8,112	8,156	8,604
Montana	8,463	6,726	7,719	7,325	6,649	7,919	7,885	8,884
Nevada	319	1,103	793	1,037	2,321	2,682	3,200	2,608
New Mexico	10,537	14,928	17,331	17,908	13,912	14,612	14,776	14,584
Utah	9,509	9,613	10,869	13,412	15,290	17,183	17,049	16,756
Wyoming	325	857	1,164	1,129	1,163	1,539	2,056	1,848
Pacific	74,945	54,088	69,645	83,092	89,471	97,242	113,755	150,414
Alaska	3,054	3,117	3,182	2,999	1,847	2,101	2,205	1,926
California	15,792	15,260	23,762	36,570	41,429	43,459	52,021	84,069
Hawaii	15,715	16,296	18,771	19,317	21,469	24,759	27,487	27,321
Oregon	15,551	16,928	18,423	18,645	19,399	20,860	22,568	25,727
Washington	24,833	2,487	5,507	5,561	5,327	6,063	9,474	11,351
Outlying Areas	8,552	9,407	10,261	10,558	8,489	7,062	7,380	8,487

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-26. Industry-financed R&D expenditures at doctorate-granting institutions, by geographic division and State: fiscal years 1984-91

[Dollars in thousands]

Division and State	1984	1985	1986	1987	1988	1989	1990	1991
Total	466,391	550,632	688,418	777,390	857,774	978,050	1,113,255	1,192,376
New England	56,117	66,590	74,813	86,493	96,433	107,101	115,753	123,632
Connecticut	5,177	6,307	5,892	9,298	9,974	11,630	13,402	16,121
Maine	2,320	1,559	2,856	2,051	2,823	4,002	4,663	4,719
Massachusetts	43,200	51,182	56,556	64,806	69,455	78,727	86,122	90,905
New Hampshire	1,063	1,554	1,578	2,081	2,397	2,951	3,715	3,997
Rhode Island	2,227	3,375	4,600	5,380	8,645	6,305	4,378	3,709
Vermont	2,130	2,613	3,331	2,877	3,139	3,486	3,473	4,181
Middle Atlantic	87,908	102,886	129,675	141,522	155,702	178,762	194,335	204,942
New Jersey	5,171	6,019	9,617	11,780	14,227	16,421	17,318	19,494
New York	42,612	48,818	58,475	63,496	63,263	70,634	77,952	85,287
Pennsylvania	40,125	48,049	61,583	66,246	78,212	91,707	99,065	100,161
East North Central	60,017	76,678	85,000	99,841	112,578	147,578	162,037	175,746
Illinois	11,654	16,141	19,692	23,791	29,173	38,990	44,812	49,583
Indiana	13,588	14,884	14,967	17,203	16,244	18,419	18,165	19,726
Michigan	13,548	19,376	21,165	25,136	26,063	36,310	44,694	49,774
Ohio	14,159	17,048	18,916	22,265	26,940	37,591	37,385	37,948
Wisconsin	7,068	9,229	10,260	11,446	14,158	16,268	16,981	18,715
West North Central	32,850	37,430	47,236	52,740	61,163	69,373	80,433	83,472
Iowa	4,713	4,687	4,749	6,212	9,488	14,711	12,354	14,372
Kansas	2,167	2,492	3,798	5,433	5,648	5,187	7,613	7,292
Minnesota	8,053	8,135	11,157	11,056	10,670	12,389	18,086	19,270
Missouri	12,162	15,587	18,691	19,325	23,494	25,151	28,082	30,195
Nebraska	3,329	3,615	5,336	6,664	8,585	9,098	11,073	9,725
North Dakota	2,052	2,296	3,072	3,578	2,742	2,521	2,845	2,308
South Dakota	374	618	433	472	536	316	380	310
South Atlantic	84,244	101,159	118,481	134,890	157,151	178,792	213,348	240,997
Delaware	2,752	2,809	3,551	3,659	3,558	4,073	4,397	4,732
District of Columbia	3,026	4,397	3,558	4,192	6,504	7,924	8,017	7,279
Florida	12,652	18,525	20,219	20,334	18,019	20,660	28,440	35,690
Georgia	25,997	26,173	30,545	34,114	34,391	35,335	37,177	39,882
Maryland	13,441	15,138	18,748	25,803	28,909	35,603	42,640	39,915
North Carolina	10,770	17,062	21,564	23,825	36,628	41,375	43,372	55,079
South Carolina	3,661	4,385	5,908	6,184	8,693	7,906	12,931	15,903
Virginia	11,260	12,076	13,484	15,895	19,672	21,953	26,292	31,347
West Virginia	685	594	904	884	777	3,963	10,082	11,170
East South Central	21,398	24,643	31,335	33,558	38,083	39,459	45,704	52,147
Alabama	7,771	8,915	10,923	10,916	12,703	16,242	18,662	20,348
Kentucky	4,378	4,768	8,173	6,715	4,591	7,516	8,123	10,569
Mississippi	2,184	2,687	2,995	4,170	4,909	5,334	8,171	8,879
Tennessee	7,065	8,273	9,244	11,757	15,880	10,367	10,748	12,351
West South Central	41,054	51,957	55,507	64,230	75,470	81,862	98,196	111,130
Arkansas	1,593	2,372	3,068	2,829	3,865	4,123	4,064	4,514
Louisiana	7,105	6,048	6,253	7,154	8,088	8,193	10,168	15,539
Oklahoma	5,980	6,541	7,083	7,078	7,855	5,667	6,872	8,559
Texas	26,376	36,996	39,103	47,169	55,662	63,879	77,092	82,518
Mountain	46,605	51,440	53,961	63,329	59,438	62,089	78,150	76,836
Arizona	9,635	11,985	14,411	17,456	15,196	12,500	18,066	19,519
Colorado	12,543	12,305	8,766	8,728	11,044	14,381	15,992	17,523
Idaho	2,584	2,826	2,787	2,899	3,654	4,199	4,206	5,050
Montana	2,255	2,066	2,717	3,197	3,129	3,242	4,266	4,406
Nevada	2,719	2,715	3,397	3,976	3,563	4,296	4,733	5,323
New Mexico	10,383	12,650	14,770	20,123	15,837	16,433	21,509	16,135
Utah	4,752	5,072	5,334	5,734	5,215	5,503	7,377	6,880
Wyoming	1,734	1,821	1,779	1,216	1,800	1,535	2,001	2,000
Pacific	36,193	37,836	92,355	100,787	101,569	112,812	124,983	123,135
Alaska	2,819	2,878	2,936	3,024	2,672	3,039	4,100	1,547
California	18,866	18,174	63,174	72,260	73,973	82,732	88,222	85,779
Hawaii	380	250	508	261	378	799	1,585	856
Oregon	5,746	6,182	6,983	4,059	4,631	4,849	6,338	6,846
Washington	8,382	10,352	18,754	21,183	19,915	21,393	24,738	28,107
Outlying Areas	5	13	55	0	187	222	316	339

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-27. Institutionally financed R&D expenditures at doctorate-granting institutions, by geographic division and State: fiscal years 1984-91

[Dollars in thousands]

Division and State	1984	1985	1986	1987	1988	1989	1990	1991
Total	1,393,927	1,599,476	1,850,049	2,149,215	2,332,269	2,679,751	2,980,062	3,320,289
New England	70,314	78,800	96,768	100,028	111,972	148,711	157,522	179,603
Connecticut	26,571	28,271	41,445	39,761	43,689	56,999	64,344	69,510
Maine	4,284	4,756	5,075	5,740	6,214	6,567	8,253	9,504
Massachusetts	29,717	30,637	35,644	37,790	40,865	58,681	53,644	66,449
New Hampshire	4,651	6,399	6,027	8,114	9,556	9,333	11,500	10,225
Rhode Island	2,226	5,261	5,202	5,293	7,294	11,646	13,237	17,520
Vermont	2,865	3,476	3,375	3,330	4,354	5,485	6,544	6,395
Middle Atlantic	162,615	199,592	236,009	269,188	311,259	364,046	399,611	437,460
New Jersey	30,370	32,665	47,636	55,142	68,835	82,798	96,322	106,819
New York	85,344	113,442	110,287	128,647	150,976	171,750	177,315	191,062
Pennsylvania	46,901	53,485	78,086	85,399	91,448	109,498	125,974	139,579
East North Central	231,545	260,510	290,267	348,441	374,596	415,859	451,668	523,919
Illinois	81,356	90,090	100,387	117,826	134,015	150,694	161,984	180,807
Indiana	28,533	28,640	31,130	37,627	39,938	43,658	52,059	61,425
Michigan	63,930	67,925	81,518	103,782	104,181	116,135	128,581	155,400
Ohio	32,144	42,596	43,712	47,189	54,761	62,068	61,520	73,765
Wisconsin	25,582	31,259	33,520	42,017	41,701	43,304	47,524	52,522
West North Central	138,093	152,896	175,779	184,248	201,626	220,024	250,529	281,767
Iowa	29,680	42,729	47,613	49,668	55,980	60,863	67,626	74,471
Kansas	18,277	21,482	27,639	27,607	27,567	30,204	33,491	39,897
Minnesota	38,235	38,231	37,251	39,371	37,261	43,713	53,399	60,904
Missouri	31,683	31,824	41,496	49,579	57,777	59,615	63,364	67,335
Nebraska	14,580	15,830	18,734	14,893	18,697	20,676	27,658	32,900
North Dakota	2,274	2,573	2,305	2,391	3,705	4,113	4,019	4,740
South Dakota	3,364	227	741	739	639	840	972	1,520
South Atlantic	220,086	250,967	300,454	378,249	404,246	500,309	554,339	602,427
Delaware	6,386	8,296	9,349	10,117	9,894	11,125	11,751	12,724
District of Columbia	5,560	5,648	10,761	11,642	11,614	13,022	10,539	12,718
Florida	59,751	65,626	68,512	98,188	93,228	112,906	122,097	116,339
Georgia	54,413	60,424	81,350	95,125	107,182	125,003	143,068	149,775
Maryland	31,015	36,001	42,215	59,733	73,156	91,738	108,922	139,720
North Carolina	21,059	21,246	22,151	25,757	31,865	41,222	40,761	51,758
South Carolina	18,992	20,750	30,488	37,110	33,793	44,864	50,859	54,011
Virginia	16,423	25,947	27,855	29,841	32,301	45,348	54,213	52,191
West Virginia	6,487	7,029	7,773	10,736	11,213	15,081	12,129	13,191
East South Central	48,812	60,274	75,396	89,485	102,184	112,108	124,650	136,902
Alabama	9,030	12,407	22,205	29,919	33,029	43,635	50,803	52,460
Kentucky	15,729	17,645	22,277	26,545	35,099	30,593	33,258	38,008
Mississippi	10,281	12,127	10,937	8,897	8,680	9,659	9,458	11,662
Tennessee	13,772	18,095	19,977	24,124	25,376	28,221	31,131	34,772
West South Central	210,529	226,529	245,167	276,433	282,016	326,407	390,884	418,621
Arkansas	6,233	5,675	7,875	8,028	7,286	9,521	12,451	12,945
Louisiana	25,486	37,041	38,096	42,639	45,611	47,129	55,010	48,024
Oklahoma	53,679	51,537	51,149	57,472	62,105	60,063	70,398	74,265
Texas	125,131	132,276	148,047	168,294	167,014	209,694	253,025	283,387
Mountain	90,564	100,528	120,831	135,731	157,007	183,797	205,554	242,869
Arizona	39,619	45,202	53,798	61,644	71,898	86,076	98,210	109,028
Colorado	18,917	18,657	21,968	17,682	17,916	17,735	22,465	25,037
Idaho	1,236	1,392	5,331	4,436	5,432	8,148	9,596	11,697
Montana	6,117	6,372	6,920	7,604	8,442	9,534	10,147	10,820
Nevada	2,432	4,375	6,106	7,824	7,824	10,396	10,172	19,675
New Mexico	4,591	6,404	6,711	14,187	16,183	17,860	19,399	26,693
Utah	12,150	12,423	13,750	16,178	23,208	27,822	29,237	33,779
Wyoming	5,502	5,703	6,247	6,176	6,104	6,226	6,328	6,140
Pacific	215,902	263,390	302,869	359,785	379,498	399,893	435,297	485,658
Alaska	16,626	16,973	17,318	17,960	19,229	21,869	23,636	28,246
California	187,127	216,124	241,302	289,604	312,118	321,575	351,652	387,313
Hawaii	1,444	1,695	2,064	2,591	2,975	3,686	3,568	3,391
Oregon	7,745	8,531	10,010	16,007	17,225	16,637	19,013	21,479
Washington	2,960	20,067	32,175	33,623	27,951	36,126	37,428	45,229
Outlying Areas	5,467	5,990	6,509	7,627	7,865	8,597	10,008	11,063

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-28. All other sources of financed R&D expenditures at doctorate-granting institutions, by geographic division and State: fiscal years 1984-91

[Dollars in thousands]

Division and State	1984	1985	1986	1987	1988	1989	1990	1991
Total	605,365	685,550	724,639	820,963	930,104	1,063,557	1,202,323	1,314,868
New England	66,153	83,393	87,208	92,869	108,877	123,758	131,881	140,508
Connecticut	7,872	17,000	15,534	23,519	23,370	23,139	24,680	27,920
Maine	472	2,407	2,004	1,059	713	533	735	600
Massachusetts	53,620	56,492	61,922	61,596	78,616	89,795	95,854	99,872
New Hampshire	1,882	2,602	3,412	4,055	4,092	5,426	5,941	7,545
Rhode Island	1,500	3,906	3,120	1,394	601	2,128	2,470	2,325
Vermont	807	986	1,216	1,246	1,485	2,737	2,201	2,246
Middle Atlantic	136,764	146,857	165,957	177,145	207,668	232,472	244,508	265,409
New Jersey	9,506	10,763	12,814	14,991	17,656	20,284	24,591	25,246
New York	93,758	95,194	106,893	111,335	137,553	153,541	161,684	180,271
Pennsylvania	33,500	40,900	46,250	50,819	52,459	58,647	58,233	59,892
East North Central	80,647	86,484	105,405	122,759	134,161	147,515	188,845	209,235
Illinois	20,177	22,656	30,999	32,065	37,974	40,911	49,322	56,993
Indiana	5,475	6,300	5,820	6,071	8,041	10,238	16,070	17,249
Michigan	17,046	14,826	24,272	29,473	31,939	35,258	41,307	46,443
Ohio	23,497	25,442	26,727	31,237	35,135	37,055	51,398	54,142
Wisconsin	14,452	17,260	17,587	23,913	21,072	24,053	30,748	34,408
West North Central	38,154	43,787	50,509	53,629	57,539	58,052	71,448	80,314
Iowa	5,395	7,315	10,363	8,091	7,663	5,621	9,724	12,589
Kansas	3,644	4,051	3,869	3,474	2,946	4,014	4,546	4,105
Minnesota	16,323	19,741	21,208	25,664	29,098	27,090	29,314	32,796
Missouri	10,568	10,272	11,759	11,794	13,275	16,057	22,690	24,090
Nebraska	1,557	1,718	2,351	3,513	3,331	4,045	3,611	4,672
North Dakota	316	317	480	827	999	1,003	1,226	1,389
South Dakota	351	373	479	266	227	222	337	673
South Atlantic	46,897	59,409	61,688	75,834	82,028	108,840	129,151	144,476
Delaware	1,046	1,107	1,675	2,248	2,407	2,310	3,244	3,163
District of Columbia	5,542	4,797	4,629	6,184	5,619	5,625	6,833	11,145
Florida	13,511	11,048	13,003	16,962	17,176	25,593	26,339	28,606
Georgia	3,434	3,507	8,027	10,052	9,524	12,135	10,743	13,108
Maryland	4,694	14,542	9,588	11,256	19,030	24,481	29,541	31,893
North Carolina	9,075	11,278	11,987	14,163	11,263	14,096	16,009	19,093
South Carolina	2,275	2,719	3,646	4,106	4,321	8,319	10,377	10,387
Virginia	6,512	9,329	7,837	9,661	11,266	14,551	24,353	22,713
West Virginia	808	1,082	1,296	1,202	1,422	1,730	1,712	4,368
East South Central	18,619	16,204	18,019	26,001	31,386	39,673	43,618	44,608
Alabama	9,671	6,796	7,877	10,259	9,555	16,456	19,691	20,653
Kentucky	713	858	1,551	3,129	5,927	5,813	4,566	4,904
Mississippi	2,692	2,021	2,038	5,396	5,709	7,573	6,512	5,620
Tennessee	5,543	6,529	6,553	7,217	10,195	9,831	12,849	13,431
West South Central	75,191	83,619	96,500	120,099	138,063	156,527	168,010	191,897
Arkansas	2,186	2,666	2,661	3,063	3,064	3,633	3,035	3,486
Louisiana	6,546	9,120	10,136	12,553	12,405	14,733	15,418	14,969
Oklahoma	2,339	5,121	3,835	5,470	7,910	9,420	8,695	13,401
Texas	64,120	66,712	79,868	99,013	114,684	128,741	140,862	160,041
Mountain	23,531	23,525	29,616	35,858	43,020	46,583	55,045	56,629
Arizona	6,189	6,514	7,830	12,243	11,968	11,942	15,531	16,009
Colorado	9,091	9,355	12,549	14,515	15,902	16,717	19,886	20,304
Idaho	726	795	96	142	0	147	251	405
Montana	0	0	0	0	214	203	162	238
Nevada	1,337	692	974	661	880	1,594	1,686	915
New Mexico	1,764	2,840	3,423	4,004	9,320	10,507	10,496	12,077
Utah	3,950	3,087	4,592	4,199	4,510	5,267	6,794	6,442
Wyoming	474	242	152	94	226	206	239	239
Pacific	119,342	142,208	109,597	116,669	127,250	148,195	167,863	179,359
Alaska	1,886	1,925	1,965	1,926	2,667	3,033	3,734	1,378
California	91,769	104,600	77,055	90,254	99,520	116,454	136,452	148,202
Hawaii	811	898	718	704	896	915	1,220	1,741
Oregon	8,493	14,248	15,419	14,683	16,928	19,640	16,165	16,439
Washington	16,383	20,537	14,440	9,102	7,239	8,153	10,292	11,599
Outlying Areas	67	64	140	100	112	1,942	1,954	2,233

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institu-tional funds	All other sources
United States, total	17,327,920	10,052,851	1,447,736	1,192,376	3,320,289	1,314,668
Public, total	11,543,180	5,914,002	1,305,665	780,645	2,752,845	790,023
Private, total	5,784,740	4,138,849	142,071	411,731	567,444	524,645
Alabama, total	244,901	125,184	26,256	20,348	52,460	20,653
Public, total	244,901	125,184	26,256	20,348	52,460	20,653
Auburn University	69,913	15,279	21,689	6,450	21,493	5,002
The University of Alabama	21,248	5,427	172	2,396	13,016	237
Univ Alabama Birmingham	113,317	76,317	2,585	7,867	11,134	15,414
Univ Alabama Huntsville	27,499	20,363	1,248	1,847	4,041	0
Univ of South Alabama	12,924	7,798	562	1,788	2,776	0
Alaska, total	67,432	34,335	1,926	1,547	28,246	1,378
Public, total	67,432	34,335	1,926	1,547	28,246	1,378
Univ of Alaska Fairbanks	67,432	34,335	1,926	1,547	28,246	1,378
Arizona, total	284,128	131,627	7,945	19,519	109,028	16,009
Public, total	284,128	131,627	7,945	19,519	109,028	16,009
Arizona State University	63,489	26,246	1,235	6,860	27,994	1,154
Northern Arizona Univ	6,913	3,563	516	568	2,266	0
University of Arizona	213,726	101,818	6,194	12,091	78,768	14,855
Arkansas, total	55,081	20,178	13,958	4,514	12,945	3,486
Public, total	55,081	20,178	13,958	4,514	12,945	3,486
U of Arkansas Med Sci Cam	14,250	7,807	576	1,191	2,791	1,885
Univ of Ark Fayetteville	40,831	12,371	13,382	3,323	10,154	1,601
California, total	2,137,216	1,431,833	84,089	85,779	387,313	148,202
Public, total	1,517,804	946,637	75,785	54,331	316,618	124,433
San Diego State Univ	28,570	16,744	4,008	1,980	5,025	813
U of California System	0	0	0	0	0	0
US Naval Postgrad School	19,397	19,264	0	0	0	133
Univ of Cal Berkeley	258,038	140,261	23,848	11,970	66,198	15,761
Univ of Cal Davis	200,664	79,961	12,328	6,599	88,499	13,277
Univ of Cal Irvine	82,523	52,652	3,485	4,163	12,837	9,386
Univ of Cal Los Angeles	250,033	167,885	5,007	8,619	36,496	32,026
Univ of Cal Riverside	57,244	16,031	2,834	1,361	34,007	3,011
Univ of Cal San Diego	261,422	200,451	8,434	11,225	22,948	18,364
Univ of Cal San Francisco	268,700	190,936	13,257	5,475	32,739	26,293
Univ of Cal Santa Barbara	59,593	46,647	1,292	2,379	5,698	3,577
Univ of Cal Santa Cruz	31,620	15,805	1,292	560	12,171	1,792
Private, total	619,412	485,196	8,304	31,448	70,695	23,769
Biola University	0	0	0	0	0	0
Cal Sch Prof Psych-Berkly	0	0	0	0	0	0
Cal Scn Prof Psych-Fresno	661	208	0	0	321	132
Cal Sch Prof Psych-L A	490	245	0	0	213	32
Cal Sch Prof Psych-S D	68	0	0	0	68	0
California Inst of Tech	115,526	100,820	337	2,764	7,101	4,504
Chas R Drew U of Med & Sc	7,043	5,311	718	129	355	530
Claremont Univ Ctr & Grad	571	66	224	50	88	143
Col Osteo Med of Pacific	6	0	0	0	3	3
Fielding Institute	0	0	0	0	0	0
Fuller Theological Sem	150	0	50	0	100	0
Loma Linda University	6,191	2,529	71	2,508	921	162
Rand Grad Inst Pol Stdies	0	0	0	0	0	0
Santa Clara University	1,579	408	0	188	959	24
Stanford University	310,429	242,340	796	11,935	37,142	18,214
The Wright Institute	0	0	0	0	0	0
US International Univ	0	0	0	0	0	0
Univ of Southern Cal	175,595	132,230	6,089	13,852	23,424	0
University of the Pacific	1,103	1,039	17	22	0	25

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institu-tional funds	All other sources
Colorado, total	262,031	186,134	13,033	17,523	25,037	20,304
Public, total	255,547	181,335	12,905	16,481	24,522	20,304
Colorado School of Mines	12,971	6,487	1,451	4,847	186	0
Colorado State University	80,474	55,689	9,537	3,380	7,835	4,033
Univ of Northern Colorado	132	91	0	3	19	19
Univ. of Colorado	161,970	119,068	1,917	8,251	16,482	16,252
Private, total	6,484	4,799	128	1,042	515	0
University of Denver	6,484	4,799i	128i	1,042i	515i	0i
Connecticut, total	316,667	197,120	5,996	16,121	69,510	27,920
Public, total	119,526	46,156	4,972	7,421	53,190	7,787
University of Connecticut	119,526	46,156	4,972	7,421	53,190	7,787
Private, total	197,141	150,964	1,024	8,700	16,320	20,133
Wesleyan University	3,248	1,458	281	0	1,188e	321
Yale University	193,893	149,506	743	8,700	15,132	19,812
Delaware, total	44,696	20,053	4,024	4,732	12,724	3,163
Public, total	44,696	20,053	4,024	4,732	12,724	3,163
University of Delaware	44,696	20,053	4,024	4,732	12,724	3,163
District of Columbia, total	118,398	86,793	463	7,279	12,718	11,145
Private, total	118,398	86,793	463	7,279	12,718	11,145
American University	5,057	4,426	5	106	314	206
Catholic Univ of America	7,365	6,301	0	1,064	0	0
George Washington Univ	29,791	23,715	242	1,248	1,315	3,271
Georgetown University	60,454	41,597	121	4,549	8,693	5,494
Howard University	15,731	10,754	95	312	2,396	2,174
Florida, total	438,054	220,683	36,736	35,690	116,339	28,606
Public, total	333,103	147,801	32,554	27,040	111,397	14,311
Florida A & M University	18,552	15,592	2,818	142	0	0
Florida Atlantic Univ	5,600	2,953	911	1,736	0	0
Florida State University	53,811	28,495	3,478	1,408	18,054	2,376
Univ of Central Florida	41,935	10,406	7,937	4,287	19,305	0
Univ of South Florida	72,948	23,578	4,957	6,091	32,387	5,935
University of Florida	140,257	66,777	12,453	13,376	41,651	6,000
Private, total	104,951	72,882	4,182	8,650	4,942	14,295
Florida Inst of Tech	6,305	1,640	2,235	1,942	488	0
Nova University	1,667	1,395	137	115	20	0
University of Miami	96,979	69,847	1,810	6,593	4,434	14,295
Georgia, total	484,019	238,032	43,222	39,882	149,775	13,108
Public, total	361,074	158,092	39,631	30,644	129,150	3,557
Georgia Institute of Tech	176,729	101,476	1,767	22,496	50,990	0
Georgia State University	9,271	3,516	190	596	3,929	1,040
Medical Col of Georgia	12,082	8,081	138	1,731	743	1,389
University of Georgia	162,992	45,019	37,536	5,821	73,488	1,128
Private, total	122,945	79,940	3,591	9,238	20,625	9,551
Clark Atlanta University	8,655	6,538	0	374	1,743	0
Emory University	91,940	60,586	3,491	6,920	13,521	7,422
Inst Paper Sci and Tech	7,887	1,408	0	435	4,773	1,271
Mercer University	8,172	6,388	100	1,424	260	0

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institutional funds	All other sources
Georgia, continued						
Private, continued						
Morehouse School of Med	6,291	5,020 i	0 i	85 i	328 i	858 i
Hawaii, total	78,166	44,857	27,321	856	3,391	1,741
Public, total	78,166	44,857	27,321	856	3,391	1,741
Univ of Hawaii-Manoa	78,166	44,857	27,321	856	3,391	1,741
Idaho, total	41,437	15,681	8,604	5,050	11,697	405
Public, total	41,437	15,681	8,604	5,050	11,697	405
Idaho State University	2,030	532	40	603	602	253
University of Idaho	39,407	15,149	8,564	4,447	11,095	152
Illinois, total	701,620	361,664	52,573	49,583	180,807	56,993
Public, total	375,212	174,794	45,882	33,097	101,083	20,356
Illinois State University	2,898	1,241	888	0	34	735
Northern Illinois Univ	10,074	4,617	395	1,629	3,433	0
Southern Ill U-Carbondale	28,340	7,092	6,931	2,190	10,497	1,630
Univ of Ill Chicago	90,520	43,096	3,981	4,844	29,022	9,577
University of Ill Urbana	243,380	118,748	33,687	24,434	58,097	8,414
Private, total	326,408	186,870	6,691	16,486	79,724	36,637
Chicago Col of Osteo Med	1,372	175	0	575	549	73
De Paul University	786	507	24	2	219	34
Illinois Inst of Tech	7,128	4,114	620	1,660	734	0
Loyola Univ - Chicago	22,702	14,703	226	1,545	2,254	3,974
Northwestern University	144,809	62,718	3,006	6,960	55,546	16,579
Rush University	27,359	7,010	987	4,092	9,748	5,522
U Hlth Sci/Chcgo Med Sch	4,908	3,650	0	227	590	441
University of Chicago	117,344	93,993	1,828	1,425	10,084	10,014
Indiana, total	262,508	143,761	20,347	19,726	61,425	17,249
Public, total	241,206	130,174	19,593	14,774	59,416	17,249
Ball State University	1,241	226	212	340	463	0
Indiana State University	1,179	307	52	105	665	50
Indiana University	102,461	61,831	1,339	2,367	26,587	10,337
Purdue University	136,325	67,810	17,990	11,962	31,701	6,862
Private, total	21,302	13,587	754	4,952	2,009	0
University of Notre Dame	21,302	13,587	754	4,952	2,009	0
Iowa, total	259,437	123,858	34,147	14,372	74,471	12,589
Public, total	259,274	123,858	34,147	14,365	74,428	12,476
Iowa St U of Sci & Tech	134,657	42,793	31,127	6,537	48,985	5,215
Univ of Northern Iowa	559	58	346	0	127	28
University of Iowa	124,058	81,007	2,674	7,828	25,316	7,233
Private, total	163	0	0	7	43	113
Univ Osteo Med & Hlth Sci	163	0	0	7	43	113
Kansas, total	124,174	43,913	28,967	7,292	39,897	4,105
Public, total	124,174	43,913	28,967	7,292	39,897	4,105
Kans St U - Ag & App Sci	53,010	15,726	24,677	2,389	8,422	1,796
University of Kansas	65,982	26,419	2,436	4,228	31,040	1,859
Wichita State University	5,182	1,768	1,854	675	435	450

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institutional funds	All other sources
Kentucky, total	97,989	38,386	6,122	10,569	38,008	4,904
Public, total	97,989	38,386	6,122	10,569	38,008	4,904
University of Kentucky	81,137	31,636	5,979	7,476	31,142	4,904
University of Louisville	16,852	6,750	143	3,093	6,866	0
Louisiana, total	239,533	98,834	62,167	15,539	48,024	14,969
Public, total	165,328	59,697	60,197	8,781	28,467	8,186
Louisiana State Univ Sys	151,433	57,033	56,158	8,477	22,652	7,113
Louisiana Tech University	2,759	1,072	1,179	304	204	0
Northeast Louisiana Univ	904	663	241	0	0	0
Univ of Southwestern LA	10,232	929	2,619	0	5,611	1,073
Private, total	74,205	39,137	1,970	6,758	19,557	6,783
Tulane University	71,781	36,713	1,970	6,758	19,557	6,783
Xavier University of LA	2,424	2,424	0	0	0	0
Maine, total	27,082	10,062	2,197	4,719	9,504	600
Public, total	27,082	10,062	2,197	4,719	9,504	600
Univ of Maine Orono	27,082	10,062	2,197	4,719	9,504	600
Maryland, total	1,078,068	784,584	81,956	39,915	139,720	31,893
Public, total	367,973	143,345	80,530	24,962	110,897	8,239
U of MD Baltimore County	6,809	4,723	1,043e	1,043e	0	0
U of MD Center For EES	16,205	2,857	2,909	83	9,076	1,280
U of MD Eastern Shore	1,620	1,371	244	0	0	5
Unif Serv Univ of Hlth Sc	47,096	12,846	0	0	34,250	0
Univ of MD Balt Prof Sch	89,811	43,682	16,136	11,898	11,141	6,954
Univ of MD College Park	206,432	77,866	60,198	11,938	56,430	0
Private, total	710,095	641,239	1,426	14,953	28,823	23,654
Johns Hopkins Univ	710,095	641,239	1,426	14,953	28,823	23,654
Massachusetts, total	948,938	678,511	13,201	90,905	66,449	99,872
Public, total	132,060	74,206	7,474	13,870	29,251	7,259
Univ of Massachusetts	119,657	67,665	6,764	10,271	29,251	5,706
University of Lowell	12,403	6,541	710	3,599	0	1,553
Private, total	816,878	604,305	5,727	77,035	37,198	92,613
Boston College	9,810	8,673	2	134	337	664
Boston University	74,881	60,166	192	6,405	0	8,118
Brandeis University	33,837	21,280	270	0	4,676	7,611
Clark University	1,314	936	0	0	0	378
Harvard University	229,939	156,014	460	11,957	18,746e	42,762e
Mass Col Phar/Allied Hlth	215	0	0	215	0	0
Mass Inst of Technology	318,901	237,667	3,254	45,712	8,827	23,441
Northeastern University	15,973	9,961i	522i	2,491i	350i	2,649i
Smith College	1,392i	291i	0i	0i	361i	740i
Tufts University	47,748	39,113	55	7,740e	818e	22e
Woods Hole Ocngrphic Inst	76,979e	67,154e	763e	786e	2,280e	5,996e
Worcester Poly Institute	5,889	3,050	209	1,595	803	232
Michigan, total	601,189	309,592	39,980	49,774	155,400	46,443
Public, total	599,484	309,182	39,980	48,683	155,263	46,376
Central Michigan Univ	1,066	110	420	47	350	139
Michigan State University	133,249	61,646	25,338	4,693	31,599	9,973
Michigan Tech University	19,667	6,870	3,844	4,150	4,803	0
Oakland University	5,912	2,852	757	848	1,355	100

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institutional funds	All other sources
Michigan, continued						
Public, continued						
University of Michigan	363,582	206,276	2,881	30,807	94,361	29,257
Wayne State University	69,997	30,583	5,583	7,295	20,836	5,700
Western Michigan Univ	6,011	845	1,157	843	1,959	1,207
Private, total	1,705	410	0	1,091	137	67
Andrews University	255	101	0	0	87	67
University of Detroit	1,450	309	0	1,091	50	0
Minnesota, total	331,471	164,887	53,614	19,270	60,904	32,796
Public, total	331,471	164,887	53,614	19,270	60,904	32,796
University of Minnesota	331,471	164,887	53,614	19,270	60,904	32,796
Private, total	0	0	0	0	0	0
Mayo Grad School of Med	0	0	0	0	0	0
Mississippi, total	96,471	49,424	20,886	8,879	11,662	5,620
Public, total	96,471	49,424	20,886	8,879	11,662	5,620
Mississippi State Univ	64,335	25,751	20,771	7,163	6,975	3,675
Univ of Sthrn Mississippi	7,388	6,736	41	350	259	2
University of Mississippi	24,748	16,937	74	1,366	4,428	1,943
Missouri, total	305,780	165,099	19,061	30,195	67,335	24,090
Public, total	125,509	36,012	14,879	12,695	54,134	7,789
Univ of Missouri Columbia	96,748	27,463	12,915	9,537	41,549	5,284
Univ of Missouri Kan City	8,300	3,123	723	1,342	2,669	443
Univ of Missouri Rolla	14,432	4,360	734	1,564	6,212	1,562
Univ of Missouri St Louis	2,468	1,046	114	150	760	398
Univ of Missouri Sys Off	3,561	20	393	102	2,944	102
Private, total	180,271	129,087	4,182	17,500	13,201	16,301
Kirksville Col Osteo Med	624	254	0	0	111	259
St Louis University	19,183	16,358	331	1,058	110	1,326
Univ of Health Sciences	0	0	0	0	0	0
Washington University	160,464	112,475	3,851	16,442	12,980	14,716
Montana, total	38,149	13,801	8,884	4,406	10,820	238
Public, total	38,149	13,801	8,884	4,406	10,820	238
Montana State University	30,278	10,109	8,113	4,043	8,013	0
University of Montana	7,871	3,692	771	363	2,807	238
Nebraska, total	123,711	40,597	35,817	9,725	32,900	4,672
Public, total	115,387	38,017	35,513	4,488	32,697	4,672
U of Neb Med Ctr at Omaha	27,858	10,518	2,679	1,682	10,798	2,181
Univ of Nebraska-Lincoln	87,529	27,499	32,834	2,806	21,899	2,491
Private, total	8,324	2,580	304	5,237	203	0
Creighton University	8,324	2,580	304	5,237	203	0
Nevada, total	66,742	38,221	2,608	5,323	19,675	915
Public, total	66,742	38,221	2,608	5,323	19,675	915
Desert Research Institute	17,948	9,795	1,262	3,670	3,014	207
Univ of Nevada - Reno	29,303	10,858	829	1,276	15,778	562
Univ of Nevada, Las Vegas	19,491	17,568	517	377	883	146

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institutional funds	All other sources
New Hampshire, total	78,975	52,833	4,375	3,997	10,225	7,545
Public, total	29,591	18,516	1,006	1,278	5,282	3,509
Univ of New Hampshire	29,591	18,516	1,006	1,278	5,282	3,509
Private, total	49,384	34,317	3,369	2,719	4,943	4,036
Dartmouth College	49,384	34,317	3,369	2,719	4,943	4,036
New Jersey, total	342,564	147,644	43,361	19,494	106,819	25,246
Public, total	241,247	91,670	39,587	13,258	80,146	16,586
N J Inst of Technology	16,463	4,080	6,149	2,018	2,727	1,489
Rutgers the St Univ of NJ	151,335	48,822	24,997	7,769	61,045	8,702
Univ of Med & Dent of N J	73,449	38,768	8,441	3,471	16,374	6,395
Private, total	101,317	55,974	3,774	6,236	26,673	8,660
Fairleigh Dickinson Univ	859	370	395	6	7	81
Princeton University	92,002	52,335	1,626	4,595	24,939	8,507
Seton Hall University	153i	153i	0i	0i	0i	0i
Stevens Institute of Tech	8,303	3,116	1,753	1,635	1,727	72
New Mexico, total	162,850	93,381	14,564	16,135	26,693	12,077
Public, total	162,850	93,381	14,564	16,135	26,693	12,077
N Mex Inst Mining & Tech	16,770e	5,718i	1,038i	6,512i	3,136i	366i
New Mexico State Univ	78,736	57,522	8,947	4,939	6,668	660
University of New Mexico	67,344	30,141	4,579	4,684	16,889	11,051
New York, total	1,467,204	933,968	76,616	85,287	191,062	180,271
Public, total	350,159	193,021	12,811	12,552	69,278	62,497
CUNY City College	15,451	11,220	789	1,032	0	2,410
CUNY Grad Sch & Univ Ctr	2,554	2,161	13	0	20	360
CUNY Hunter College	8,075	5,524	0	201	1,555	795
SUNY Col of Env Sci & For	19,049	2,126	762	1,707	13,615	839
SUNY Hlth Sci Ctr - Brkln	32,824	17,949	3,597	732	2,960	7,586
SUNY Hlth Sci Ctr - Syrcs	37,294	10,667	99	350	0	26,178
SUNY St Coll of Optometry	231	118	0	24	75	14
SUNY at Albany	20,580	12,204	6	876	6,614	880
SUNY at Binghamton	9,870	3,130	1,337	1,761	2,665	977
SUNY at Buffalo	113,441	68,945	4,305	3,086	20,946	16,159
SUNY at Stony Brook	90,790	58,977	1,903	2,783	20,828	6,299
Private, total	1,117,045	740,947	63,805	72,735	121,784	117,774
Adelphi University	630i	288i	219i	0i	123i	0i
Albany Medical College	10,131	6,291	0	677	1,637	1,526
Alfred University	3,911	320	1,088	1,720	736	47
CUNY Mt Sinai Sch of Med	66,310	42,035	1,027	3,978	6,984	12,286
Clarkson University	9,125	4,229	1,066	2,051	1,779	0
Columbia U Teachers Col	429	95	0	0	18	316
Columbia Univ Main Div	194,666	163,561	2,998	6,619	5,130	16,358
Cornell University	309,535	173,478	40,548	16,761	55,491	23,257
Fordham University	1,816	1,303	169	0	0	344
Hofstra University	493	418	75	0	0	0
Long Island University	170	20	0	33	26	91
New Sch For Soc Research	1,164	344	0	0	0	820
New York Inst Technology	2,900e	0i	0i	446i	2,454i	0i
New York Medical College	14,633	11,056	146	1,981	0	1,450
New York University	112,106	81,896	1,398	5,947	8,703	14,162
Polytechnic University	9,272	5,600	1,110	1,972	500	90
Rensselaer Polytech Inst	50,106	23,372	4,121	12,236	3,701	6,676
Rockefeller University	74,090	36,759	54	4,816	16,339	16,122
St John's University (NY)	593	528	6	59	0	0
Syracuse University	30,606	14,192	2,513	4,405	5,887	3,609
Union College (NY)	5,861	457	371	619	0	4,414
University of Rochester	131,777	106,874	6,896	6,814	1,388	9,805
Yeshiva University	86,721	67,831	0	1,601	10,888	6,401

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institutional funds	All other sources
North Carolina, total	501,841	303,921	71,990	55,079	51,758	19,093
Public, total	293,395	155,657	69,572	26,276	37,268	4,622
East Carolina University	6,119	3,612	1,009	1,498	0	0
N C State Univ at Raleigh	142,606	46,894	50,107	20,961	20,106	4,538
Univ of N C at Greensboro	1,989	1,666	55	140	44	84
Univ of NC at Chapel Hill	142,681	103,485	18,401	3,677	17,118	0
Private, total	208,446	148,264	2,418	28,803	14,490	14,471
Duke University	164,232	114,879	2,219	22,876	12,629	11,629
Wake Forest University	44,214	33,385	199	5,927	1,861	2,842
North Dakota, total	30,816	21,352	1,027	2,308	4,740	1,389
Public, total	30,816	21,352	1,027	2,308	4,740	1,389
North Dakota State Univ	13,821	6,882	893	1,455	3,415	1,176
University of N Dakota	16,995	14,470	134	853	1,325	213
Ohio, total	503,725	284,791	53,079	37,948	73,765	54,142
Public, total	361,601	177,269	49,610	28,922	62,762	43,038
Air Force Inst of Tech/Nr	2,243	2,243	0	0	0	0
Bowling Green State Univ	3,729	1,602	484	267	1,396	0
Cleveland State Univ	10,205	4,528	2,114	753	2,810	0
Kent State University	8,469	5,171	848	125	2,147	178
Med Col of Ohio at Toledo	9,353	5,970	981	685	1,155	562
Miami University (Ohio)	3,087	2,050	485	552	0	0
NE Ohio Univ Med School	1,408	724	176	6	373	129
Ohio State University	194,919	88,542	32,880	15,409	26,514	31,574
Ohio University	12,796	4,539	3,423	839	3,589	406
University of Akron	13,405	3,411	3,555	3,813	2,626	0
University of Cincinnati	80,598	47,445	2,951	4,050	18,126	8,026
University of Toledo	6,743	2,997	713	1,861	729	443
Wright State University	14,646	8,047	1,020	562	3,297	1,720
Private, total	142,124	107,522	3,469	9,026	11,003	11,104
Antioch University	0	0	0	0	0	0
Case Western Reserve Univ	104,199	76,390	3,024	4,667	9,087	11,031
Union Institute	0	0	0	0	0	0
University of Dayton	37,925	31,132	445	4,359	1,916	73
Oklahoma, total	152,624	42,806	13,593	8,559	74,265	13,401
Public, total	147,269	41,542	12,750	6,003	73,613	13,361
Oklahoma State University	67,492	15,756	4,871	2,473	43,174	1,218
University of Oklahoma	79,777	25,786	7,879	3,530	30,439	12,143
Private, total	5,355	1,264	843	2,556	652	40
Oral Roberts University	37	0	0	8	29	0
University of Tulsa	5,318	1,264	843	2,548	623	40
Oregon, total	179,340	108,849	25,727	6,846	21,479	16,439
Public, total	168,180	101,887	25,124	5,173	20,084	15,912
Oregon Hlth Sciences Univ	41,661	28,897	0	1,099	6,056	5,609
Oregon State University	96,199	51,099	24,165	3,776	8,238	8,921
Portland State University	4,169	2,580	623	74	590	302
University of Oregon	26,151	19,311	336	224	5,200	1,080
Private, total	11,160	6,962	603	1,673	1,395	527
Oregon Grad Inst Sci/Tech	11,160	6,962	603	1,673	1,395	527

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institutional funds	All other sources
Pennsylvania, total	879,004	552,867	26,705	100,161	139,579	59,892
Public, total	453,059	275,017	10,728	48,149	101,645	17,520
Pennsylvania State Univ	267,816	146,212	8,807	37,587	75,130	80
Temple University	54,921	28,873	731	3,452	17,661	4,204
University of Pittsburgh	130,322	99,932	1,190	7,110	8,854	13,236
Private, total	425,945	277,650	15,977	52,012	37,934	42,372
Bryn Mawr College	2,490	976	74	0	817	623
Carnegie-Mellon Univ	103,030	65,290	5,665	20,438	2,357	9,280
Drexel University	19,705	7,559	1,275	2,873	7,998	0
Duquesne University	572	250	0	0	235	87
Hahnemann University	13,536 i	8,037 i	346 i	238 i	1,637 i	3,278 i
Lehigh University	27,912	11,870	2,500	8,133	4,556	853
Phila Col Osteopathic Med	339 i	81 i	0 i	0 i	246 i	12 i
Phila Col of Pharm & Sci	968	368	0	600	0	0
The Medical Col of Penna	24,645	14,960	1,869	2,498	4,254	1,066
Thomas Jefferson Univ	33,066	23,100	0	9,966	0	0
Univ of Pennsylvania	198,221	144,451	3,793	7,171	15,633	27,173
Villanova University	1,461	708	455	97	201	0
Rhode Island, total	88,448	59,616	5,278	3,709	17,520	2,325
Public, total	38,842	23,980	5,105	1,212	8,432	113
Univ of Rhode Island	38,842	23,980	5,105	1,212	8,432	113
Private, total	49,606	35,636	173	2,497	9,088	2,212
Brown University	49,503	35,571	173	2,497	9,050	2,212
Providence College	103	65	0	0	38	0
South Carolina, total	151,204	54,045	16,858	15,903	54,011	10,387
Public, total	151,204	54,045	16,858	15,903	54,011	10,387
Clemson University	70,236	16,594	15,267	6,163	29,012	3,200
Med Univ of S. Carolina	25,877	14,367	0	2,115	4,259	5,136
Univ of South Carolina	55,091	23,084	1,591	7,625	20,740	2,051
South Dakota, total	15,959	6,917	6,539	310	1,520	673
Public, total	15,959	6,917	6,539	310	1,520	673
S Dak Sch Mines & Tech	2,850	2,056	651	60	31	52
South Dakota State Univ	11,511	4,102	5,488	250	1,089	582
Univ of South Dakota	1,598	759	400	0	400	39
Tennessee, total	240,054	146,573	32,927	12,351	34,772	13,431
Public, total	152,046	68,538	32,722	10,354	31,940	8,492
East Tennessee State Univ	1,740	1,060	24	10	82	564
Memphis State University	12,000	2,954	3,077	616	4,883	470
Tenn Technological Univ	9,888	949	4,581	871	3,107	380
Univ. Of Tennessee System	128,418	63,575	25,040	8,857	23,868	7,078
Private, total	88,008	78,035	205	1,997	2,832	4,939
Meharry Medical College	7,249	7,014	0	56	37	142
Vanderbilt University	80,759	71,021	205	1,941	2,795	4,797
Texas, total	1,215,523	550,558	139,019	82,518	283,387	160,041
Public, total	1,010,505	439,552	132,028	70,871	260,445	107,609
East Texas State Univ	260	85	0	103	24	48
Lamar University	2,898	1,914	855	129	0	0
Sam Houston State Univ	1,238	229	510	225	274	0
Stephen F Austin St Univ	1,178	282	417	138	157	184

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institutional funds	All other sources
Texas, continued						
Public, continued						
Texas A & M University	288,005	97,727	77,963	23,050	78,059	11,206
Texas Col of Osteo Med	3,504	3,135	69	0	0	300
Texas Tech University	34,994	9,323	12,062	4,763	7,515	1,331
Texas Woman's University	1,359	466	610	283	0	0
U Tex Hlth Sci Ctr Houstn	53,896	32,778	1,997	6,392	6,077	6,652
U Tex Hlth Sci Ctr S Anto	51,768	32,770	3,148	6,876	6,165	2,809
U Tex Med Brnch Galveston	45,066	20,974	6,109	2,652	9,257	6,094
U of Houston	42,292	20,140	10,830	1,608	6,710	3,004
UT MD Anderson Cancer Ctr	108,988	32,314	0	0	55,933	20,741
UT SW Medical Ctr-Dallas	94,511	57,746	48	9,330	6,235	21,152
Univ of North Texas	10,580	1,942	4,197	3,576	865	0
Univ of Tex at Arlington	12,887	2,741	1,437	2,884	5,825	0
Univ of Texas at Austin	237,043	113,192	8,804	5,734	75,225	34,088
Univ of Texas at Dallas	10,571	4,822	1,403	2,403	1,943	0
Univ of Texas at El Paso	9,447	6,972	1,569	725	181	0
Private, total	205,018	111,006	6,991	11,647	22,942	52,432
Baylor Col of Dentistry	824	696	0	9	84	35
Baylor Col of Medicine	161,084	78,752	3,585	7,294	21,270	50,183
Baylor University	1,067	324	72	121	317	233
Rice University	30,577	22,838	2,589	3,600	0	1,550
Southern Methodist Univ	8,607	5,966	745	286	1,179	431
Texas Christian Univ	2,859	2,430	0	337	92	0
Utah, total	201,470	137,613	16,756	6,880	33,779	6,442
Public, total	188,788	130,531	16,047	5,063	30,886	6,261
University of Utah	94,621	68,769	2,961	2,908	15,621	4,362
Utah State University	94,167	61,762	13,086	2,155	15,265	1,899
Private, total	12,682	7,082	709	1,817	2,893	181
Brigham Young University	12,682	7,082	709	1,817	2,893	181
Vermont, total	46,541	30,860	2,859	4,181	6,395	2,246
Public, total	46,541	30,860	2,859	4,181	6,395	2,246
U of VT & State Agr Coll	46,541	30,860	2,859	4,181	6,395	2,246
Virginia, total	337,874	178,896	52,727	31,347	52,191	22,713
Public, total	324,614	171,803	52,727	29,302	52,088	18,694
College of William & Mary	18,508	7,283	993	526	8,938	768
George Mason University	8,469	4,044	1,522	1,000	39	1,864
Old Dominion U Res Fdn	10,040	6,576	2,485	979	0	0
University of Virginia	96,733	61,060	6,597	8,153	10,341	10,582
VA Polytech Inst & St U	125,256	47,866	38,655	12,443	22,497	3,795
Virginia Commonwlth Univ	65,608	44,974	2,475	6,201	10,273	1,685
Private, total	13,260	7,093	0	2,045	103	4,019
Eastern VA Medical School	11,112	7,093	0	0	0	4,019
Institute of Textile Tech	2,148	0	0	2,045	103	0
Washington, total	349,667	253,381	11,351	28,107	45,229	11,599
Public, total	349,667	253,381	11,351	28,107	45,229	11,599
University of Washington	274,423	221,124	5,879	26,033	17,577	3,810
Washington State Univ	75,244	32,257	5,472	2,074	27,652	7,789
West Virginia, total	50,772	20,479	1,564	11,170	13,191	4,368

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-29. R&D expenditures at doctorate-granting institutions, by State, control, and source of funds: fiscal year 1991

[Dollars in thousands]

State, control, and institution	Total	Federal Government	State and local governments	Industry	Institu-tional funds	All other sources
West Virginia, continued						
Public, total	50,772	20,479	1,564	11,170	13,191	4,368
Marshall University	918	883	0	7	28	0
W VA Schl Osteopathic Med	168	14	0	0	154	0
West Virginia University	49,686	19,582	1,564	11,163	13,009	4,368
Wisconsin, total	387,621	217,590	64,386	18,715	52,522	34,408
Public, total	343,354	190,460	63,500	13,123	48,654	27,617
Univ of Wis-Madison	326,489	183,652	57,110	12,624	46,833	26,270
Univ of Wis-Milwaukee	16,865	6,808	6,390	499	1,821	1,347
Private, total	44,267	27,130	886	5,592	3,868	6,791
Marquette University	3,821	2,068	28	1,417	308	0
Medical College of Wis	40,446	25,062	858	4,175	3,560	6,791
Wyoming, total	23,009	12,782	1,848	2,000	6,140	239
Public, total	23,009	12,782	1,848	2,000	6,140	239
University of Wyoming	23,009	12,782	1,848	2,000	6,140	239
Puerto Rico, total	45,747	23,625	8,487	339	11,063	2,233
Public, total	43,306	21,447	8,384	339	10,929	2,207
Univ of P R-Mayaguez	31,938i	14,613i	7,839i	312i	7,195i	1,979i
Univ of P R-Med Sci Cmpus	6,310	3,974	543	0	1,602	191
Univ. of Puerto Rico	5,058	2,860	2	27	2,132	37
Private, total	2,441	2,178	103	0	134	26
Catholic U of PR	217	214	3	0	0	0
Ponce School of Medicine	1,372	1,347	8	0	0	17
U Ctrl Del Caribe Esc Med	852	617	92	0	134	9

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY: e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-30. R&D expenditures at doctorate-granting institutions, by geographic division, State, and science and engineering field: fiscal year 1991

[Dollars in thousands]

Division and State	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
Total	17,327,920	2,849,838	1,882,296	1,084,074	756,834	9,399,362	275,416	723,487	356,613
New England	1,506,651	234,325	204,459	151,820	57,184	720,218	31,092	78,446	29,107
Connecticut	316,667	28,904	23,363	10,016	8,281	228,865	8,333	7,401	1,504
Maine	27,082	3,724	685	5,107	66	15,586	292	1,622	0
Massachusetts	948,938	177,880	168,471	97,039	39,777	363,689	16,701	64,167	21,214
New Hampshire	78,975	8,176	3,068	16,538	1,206	41,938	481	2,255	5,313
Rhode Island	88,448	14,644	7,877	22,683	7,538	27,855	4,148	2,913	790
Vermont	46,541	997	995	437	316	42,285	1,137	88	286
Middle Atlantic	2,688,772	438,196	255,114	102,221	156,977	1,541,183	58,039	113,264	23,778
New Jersey	342,564	58,833	43,036	20,776	22,189	156,697	11,527	24,188	5,318
New York	1,467,204	183,826	148,837	61,878	72,011	924,106	27,858	43,777	4,911
Pennsylvania	879,004	195,537	63,241	19,567	62,777	460,380	18,654	45,299	13,549
East North Central	2,456,663	422,666	276,092	89,082	76,623	1,289,179	46,009	140,293	116,719
Illinois	701,620	93,064	87,212	33,207	33,162	339,464	13,924	26,091	75,496
Indiana	262,508	42,706	49,969	3,324	9,096	137,324	5,210	10,116	4,763
Michigan	601,189	100,539	55,038	21,483	16,387	325,005	11,502	53,754	17,481
Ohio	503,725	138,643	47,565	7,133	9,500	255,523	5,244	24,089	16,028
Wisconsin	387,621	47,714	36,308	23,935	8,478	231,863	10,129	26,243	2,951
West North Central	1,191,348	138,410	79,584	35,675	57,679	807,116	13,812	41,268	17,804
Iowa	259,437	47,841	27,269	1,099	15,896	148,987	1,869	12,840	3,636
Kansas	124,174	15,149	10,128	7,005	1,077	77,584	1,736	1,758	9,737
Minnesota	331,471	27,460	18,143	12,053	30,917	222,512	7,622	12,188	576
Missouri	305,780	23,747	16,769	4,615	8,120	239,421	2,028	8,503	2,577
Nebraska	123,711	12,377	5,135	5,657	1,267	96,080	315	2,808	72
North Dakota	30,816	10,263	1,693	2,731	396	12,492	164	2,101	976
South Dakota	15,959	1,573	447	2,515	6	10,040	78	1,070	230
South Atlantic	3,204,926	649,881	352,179	191,643	189,645	1,611,471	34,856	123,386	51,865
Delaware	44,696	12,528	7,996	6,563	2,021	10,762	606	4,220	0
District of Columbia	118,398	10,437	13,719	482	9,770	76,166	1,188	6,515	121
Florida	438,054	61,864	39,921	47,938	8,318	221,805	8,862	13,860	35,486
Georgia	484,019	140,799	35,672	14,263	26,791	225,293	7,794	32,658	749
Maryland	1,078,068	254,837	190,173	64,050	97,308	435,128	5,071	17,972	13,529
North Carolina	501,841	52,855	25,521	17,383	17,477	362,542	4,116	21,692	255
South Carolina	151,204	32,975	9,379	9,979	8,035	76,303	2,112	11,435	986
Virginia	337,874	76,561	28,017	25,712	9,781	179,117	5,005	13,445	216
West Virginia	50,772	7,005	1,781	5,273	10,144	24,355	102	1,589	523
East South Central	679,415	128,853	52,234	19,268	17,348	420,328	7,790	20,329	13,265
Alabama	244,901	45,790	16,824	3,594	8,076	161,310	2,164	3,932	3,211
Kentucky	97,989	15,817	2,892	540	706	71,374	188	2,631	3,841
Mississippi	96,471	18,236	13,774	1,999	214	52,240	445	4,398	5,165
Tennessee	240,054	49,010	18,744	13,135	8,352	135,404	4,993	9,368	1,048
West South Central	1,662,761	272,582	153,321	141,077	54,142	929,774	15,175	67,829	28,861
Arkansas	55,081	5,710	4,114	792	1,284	39,006	554	2,569	1,052
Louisiana	239,533	40,137	13,622	16,587	6,537	144,189	1,460	13,987	3,014
Oklahoma	152,624	30,513	11,028	12,733	5,094	68,965	4,092	13,973	6,226
Texas	1,215,523	196,222	124,557	110,965	41,227	677,614	9,069	37,300	18,569
Mountain	1,079,816	247,350	148,195	112,063	42,271	435,551	20,277	45,333	28,776
Arizona	284,128	38,540	80,597	22,594	7,586	107,038	5,535	16,557	5,681
Colorado	262,031	46,844	33,496	35,803	7,477	116,635	10,743	11,033	0
Idaho	41,437	8,235	2,087	2,079	62	26,090	51	1,946	887
Montana	38,149	4,330	3,878	586	485	25,415	76	2,616	763
Nevada	66,742	4,069	1,640	23,562	11,227	14,285	81	4,420	7,458
New Mexico	162,850	77,413	7,985	8,397	9,535	48,167	942	6,450	3,961
Utah	201,470	65,316	16,507	15,582	5,451	85,363	2,510	2,223	8,518
Wyoming	23,009	2,603	2,005	3,460	448	12,558	339	88	1,508
Pacific	2,811,821	315,902	359,690	239,766	104,828	1,605,761	48,329	92,219	45,326
Alaska	67,432	3,616	12,818	31,485	208	16,908	0	2,397	0
California	2,137,216	270,473	290,867	137,702	90,208	1,231,703	39,083	65,602	11,578
Hawaii	78,166	1,607	19,762	20,168	312	27,060	229	3,379	5,649
Oregon	179,340	12,917	18,947	26,823	4,930	109,653	3,522	5,608	942
Washington	349,667	27,289	17,296	23,588	9,170	224,437	5,495	15,235	27,157
Outlying Areas	45,747	1,673	1,428	1,459	137	38,781	37	1,120	1,112

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and Institution	Total	Engineering	Physical sciences	Environmental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
United States, total	17,327,920	2,849,838	1,882,296	1,084,074	756,834	9,399,362	275,416	723,487	356,613
Public, total	11,543,180	1,912,841	1,178,232	821,664	403,375	6,216,601	189,302	540,387	280,778
Private, total	5,784,740	936,997	704,064	262,410	353,459	3,182,761	86,114	183,100	75,835
Alabama, total	244,901	45,790	16,824	3,594	8,076	161,310	2,164	3,932	3,211
Public, total	244,901	45,790	16,824	3,594	8,076	161,310	2,164	3,932	3,211
Auburn University	69,913	22,182	3,900	251	1,008	40,774	172	394	1,232
The University of Alabama	21,248	5,996	4,516	1,992	2,118	2,560	894	2,620	552
Univ Alabama Birmingham	113,317	4,711	516	66	694	106,472	753	105	0
Univ Alabama Huntsville	27,499	12,781	7,768	923	4,245	299	8	156	1,319
Univ of South Alabama	12,924	120	124	362	11	11,205	337	657	108
Alaska, total	67,432	3,616	12,818	31,485	208	16,908	0	2,397	0
Public, total	67,432	3,616	12,818	31,485	208	16,908	0	2,397	0
Univ of Alaska Fairbanks	67,432	3,616	12,818	31,485	208	16,908	0	2,397	0
Arizona, total	284,128	38,540	80,597	22,594	7,586	107,038	5,535	16,557	5,681
Public, total	284,128	38,540	80,597	22,594	7,586	107,038	5,535	16,557	5,681
Arizona State University	63,489	20,129	15,306	5,376	2,268	6,390	2,556	7,489	3,973
Northern Arizona Univ	6,913	331	452	1,042	140	3,065	716	797	370
University of Arizona	213,726	18,080	64,837	16,176	5,178	97,583	2,263	8,271	1,338
Arkansas, total	55,081	5,710	4,114	792	1,284	39,006	554	2,569	1,052
Public, total	55,081	5,710	4,114	792	1,284	39,006	554	2,569	1,052
U of Arkansas Med Sci Cam	14,250	0	0	0	0	14,250	0	0	0
Univ of Ark Fayetteville	40,831	5,710	4,114	792	1,284	24,756	554	2,569	1,052
California, total	2,137,216	270,473	290,867	137,702	90,208	1,231,703	39,083	65,602	11,578
Public, total	1,517,804	135,751	177,058	110,781	38,057	965,549	23,690	56,250	10,668
San Diego State Univ	28,570	4,466	1,054	581	1,960	12,518	2,181	1,457	4,353
U of California System	0	0	0	0	0	0	0	0	0
US Naval Postgrad School	19,397	6,599	2,282	3,426	2,030	0	0	3,490	1,570
Univ of Cal Berkeley	258,038	57,481	55,736	3,619	6,455	104,359	6,548	19,894	3,946
Univ of Cal Davis	200,664	9,634	7,471	894	1,256	178,466	800	2,143	0
Univ of Cal Irvine	82,523	5,171	13,043	147	4,021	55,419	0	3,923	799
Univ of Cal Los Angeles	250,033	25,715	22,407	13,813	7,340	157,174	7,142	16,442	0
Univ of Cal Riverside	57,244	40	4,299	1,413	664	49,362	602	864	0
Univ of Cal San Diego	261,422	5,624	41,115	70,038	9,801	129,711	2,965	2,168	0
Univ of Cal San Francisco	268,700	0	0	0	0	268,700	0	0	0
Univ of Cal Santa Barbara	59,593	20,648	15,069	10,014	3,440	2,787	2,690	4,945	0
Univ of Cal Santa Cruz	31,620	373	14,582	6,836	1,090	7,053	762	924	0
Private, total	619,412	134,722	113,809	26,921	52,151	266,154	15,393	9,352	910
Biola University	0	0	0	0	0	0	0	0	0
Cal Sch Prof Psych-Berkly	0	0	0	0	0	0	0	0	0
Cal Sch Prof Psych-Fresno	661	0	0	0	0	0	661	0	0
Cal Sch Prof Psych-L A	490	0	0	0	0	0	490	0	0
Cal Sch Prof Psych-S D	68	0	0	0	0	0	68	0	0
California Inst of Tech	115,526	17,931	47,728	16,627	5,719	26,275	0	444	802
Chas R Drew U of Med & Sc	7,043	0	0	0	0	7,043	0	0	0
Claremont Univ Ctr & Grad	571	0	0	0	70	0	356	145	0
Col Osteo Med of Pacific	6	0	0	0	0	6	0	0	0
Fielding Institute	0	0	0	0	0	0	0	0	0
Fuller Theological Sem	150	0	0	0	0	0	150	0	0
Loma Linda University	6,191	0	0	0	0	6,191	0	0	0
Rand Grad Inst Pol Stdies	0	0	0	0	0	0	0	0	0
Santa Clara University	1,579	644	254	0	185	283	8	205	0
Stanford University	310,429	92,089	58,283	2,496	11,917	138,102	3,583	3,959	0
The Wright Institute	0	0	0	0	0	0	0	0	0
US International Univ	0	0	0	0	0	0	0	0	0
Univ of Southern Cal	175,595	24,010	7,349	7,798	34,260	87,695	9,776	4,599	108
University of the Pacific	1,103	48	195	0	0	559	301	0	0

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and Institution	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
Colorado, total	262,031	46,844	33,496	35,803	7,477	116,635	10,743	11,033	0
Public, total	255,547	46,604	30,138	35,765	7,466	116,167	8,424	10,983	0
Colorado School of Mines	12,971	8,648	1,716	737	1,325	0	0	545	0
Colorado State University	80,474	16,406	5,220	9,520	916	39,548	2,476	6,388	0
Univ of Northern Colorado	132	0	31	0	0	101	0	0	0
Univ. of Colorado	161,970	21,550	23,171	25,508	5,225	76,518	5,948	4,050	0
Private, total	6,484	240	3,358	38	11	468	2,319	50	0
University of Denver	6,484	240	3,358	38	11	468	2,319	50	0
Connecticut, total	316,667	28,904	23,363	10,016	8,281	228,865	8,333	7,401	1,504
Public, total	119,526	21,575	3,409	7,621	2,407	74,000	4,539	4,471	1,504
University of Connecticut	119,526	21,575	3,409	7,621	2,407	74,000	4,539	4,471	1,504
Private, total	197,141	7,329	19,954	2,395	5,874	154,865	3,794	2,930	0
Wesleyan University	3,248e	0i	1,217i	36i	546i	1,338i	84i	27i	0i
Yale University	193,893	7,329	18,737	2,359	5,328	153,527	3,710	2,903	0
Delaware, total	44,696	12,528	7,996	6,563	2,021	10,762	606	4,220	0
Public, total	44,696	12,528	7,996	6,563	2,021	10,762	606	4,220	0
University of Delaware	44,696	12,528	7,996	6,563	2,021	10,762	606	4,220	0
District of Columbia, total	118,398	10,437	13,719	482	9,770	76,166	1,188	6,515	121
Private, total	118,398	10,437	13,719	482	9,770	76,166	1,188	6,515	121
American University	5,057	0	1,403	0	131	1,537	183	1,803	0
Catholic Univ of America	7,365	1,443	4,362	0	0	758	493	309	0
George Washington Univ	29,791	5,123	933	104	5,898	16,988	202	442	101
Georgetown University	60,454	0	5,253	378	1,105	50,375	72	3,251	20
Howard University	15,731	3,871	1,768	0	2,636	6,508	238	710	0
Florida, total	438,054	61,864	39,921	47,938	8,318	221,805	8,862	13,860	35,486
Public, total	333,103	58,525	37,982	26,334	7,714	149,282	7,305	11,400	34,561
Florida A & M University	18,552	2,797	2,034	0	35	13,686	0	0	0
Florida Atlantic Univ	5,600	3,074	315	0	829	288	1,049	45	0
Florida State University	53,811	846	12,297	7,452	1,525	6,142	2,361	5,661	17,527
Univ of Central Florida	41,935	5,418	10,765	7,307	819	1,156	619	378	15,473
Univ of South Florida	72,948	16,945	2,325	6,305	227	44,554	1,783	809	0
University of Florida	140,257	29,445	10,246	5,270	4,279	83,456	1,493	4,507	1,561
Private, total	104,951	3,339	1,939	21,604	604	72,523	1,557	2,460	925
Florida Inst of Tech	6,305	1,696	603	1,133	322	1,655	207	0	689
Nova University	1,667	0	78	1,322	0	0	248	9	10
University of Miami	96,979	1,643	1,258	19,149	282	70,868	1,102	2,451	226
Georgia, total	484,019	140,799	35,672	14,263	26,791	225,293	7,794	32,658	749
Public, total	361,074	129,020	24,790	12,293	25,987	131,252	7,074	29,909	749
Georgia Institute of Tech	176,729	124,708	14,422	5,519	19,321	2,705	1,281	8,491	282
Georgia State University	9,271	0	2,307	149	595	1,889	2,267	1,597	467
Medical Col of Georgia	12,082	0	0	0	0	12,082	0	0	0
University of Georgia	162,992	4,312	8,061	6,625	6,071	114,576	3,526	19,821	0
Private, total	122,945	11,779	10,882	1,970	804	94,041	720	2,749	0
Clark Atlanta University	8,655	0	3,556	1,922	0	3,177	0	0	0
Emory University	91,940	0	5,407	48	238	82,778	720	2,749	0
Inst Paper Sci and Tech	7,887	4,595	1,919	0	566	807	0	0	0
Mercer University	8,172	7,184	0	0	0	988	0	0	0

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and Institution	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
Georgia, continued									
Private, continued									
Morehouse School of Med	6,291	0i	0i	0i	0i	6,291 i	0i	0i	0i
Hawaii, total	78,166	1,607	19,762	20,168	312	27,060	229	3,379	5,649
Public, total	78,166	1,607	19,762	20,168	312	27,060	229	3,379	5,649
Univ of Hawaii-Manoa	78,166	1,607	19,762	20,168	312	27,060	229	3,379	5,649
Idaho, total	41,437	8,235	2,087	2,079	62	26,090	51	1,946	887
Public, total	41,437	8,235	2,087	2,079	62	26,090	51	1,946	887
Idaho State University	2,030	204	238	118	11	1,262	14	81	102
University of Idaho	39,407	8,031	1,849	1,961	51	24,828	37	1,865	785
Illinois, total	701,620	93,064	87,212	33,207	33,162	339,464	13,924	26,091	75,496
Public, total	375,212	68,368	49,481	26,788	25,267	127,312	7,874	20,716	49,406
Illinois State University	2,898	0	344	1	63	885	41	1,564	0
Northern Illinois Univ	10,074	600	1,850	405	269	2,794	266	3,379	511
Southern Ill U-Carbondale	28,340	5,134	993	456	2,487	12,578	620	1,315	4,757
Univ of Ill Chicago	90,520	7,940	6,783	258	1,959	59,217	977	3,496	9,892
University of Ill Urbana	243,380	54,694	39,511	25,670	20,489	51,838	5,970	10,962	34,246
Private, total	326,408	24,696	37,731	6,419	7,895	212,152	6,050	5,375	26,090
Chicago Col of Osteo Med	1,372	0	0	0	0	1,372	0	0	0
De Paul University	786	0	10	0	31	58	534	149	4
Illinois Inst of Tech	7,128	5,093	938	741	229	56	71	0	0
Loyola Univ - Chicago	22,702	0	385	0	431	21,229	187	468	2
Northwestern University	144,809	19,603	11,847	730	4,229	79,551	1,191	1,574	26,084
Rush University	27,359	0	0	0	0	25,341	2,018	0	0
U Hlth Sci/Chcgo Med Sch	4,908	0	0	0	0	4,584	324	0	0
University of Chicago	117,344	0	24,551	4,948	2,975	79,961	1,725	3,184	0
Indiana, total	262,508	42,706	49,969	3,324	9,096	137,324	5,210	10,116	4,763
Public, total	241,206	36,123	39,663	3,163	8,706	133,958	5,003	9,998	4,592
Ball State University	1,241	187	133	48	251	543	24	52	3
Indiana State University	1,179	150	249	148	44	416	19	108	45
Indiana University	102,461	656	24,147	765	2,514	62,685	3,566	3,955	4,173
Purdue University	136,325	35,130	15,134	2,202	5,897	70,314	1,394	5,883	371
Private, total	21,302	6,583	10,306	161	390	3,366	207	118	171
University of Notre Dame	21,302	6,583	10,306	161	390	3,366	207	118	171
Iowa, total	259,437	47,841	27,269	1,099	15,896	148,987	1,869	12,840	3,636
Public, total	259,274	47,841	27,269	1,099	15,896	148,824	1,869	12,840	3,636
Iowa St U of Sci & Tech	134,657	36,768	8,475	605	13,792	62,329	728	8,619	3,341
Univ of Northern Iowa	559	268	16	0	0	107	0	82	86
University of Iowa	124,058	10,805	18,778	494	2,104	86,388	1,141	4,139	209
Private, total	163	0	0	0	0	163	0	0	0
Univ Osteo Med & Hlth Sci	163	0	0	0	0	163	0	0	0
Kansas, total	124,174	15,149	10,128	7,005	1,077	77,584	1,736	1,758	9,737
Public, total	124,174	15,149	10,128	7,005	1,077	77,584	1,736	1,758	9,737
Kans St U - Ag & App Sci	53,010	6,635	3,162	240	601	39,863	285	1,325	899
University of Kansas	65,982	4,365	6,648	6,759	301	37,315	1,421	335	8,838
Wichita State University	5,182	4,149	318	6	175	406	30	98	0

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and Institution	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
Kentucky, total	97,989	15,817	2,892	540	706	71,374	188	2,631	3,841
Public, total	97,989	15,817	2,892	540	706	71,374	188	2,631	3,841
University of Kentucky	81,137	14,610	2,039	168	598	58,612	187	1,082	3,841
University of Louisville	16,852	1,207	853	372	108	12,762	1	1,549	0
Louisiana, total	239,533	40,137	13,622	16,587	3,537	144,189	1,460	13,987	3,014
Public, total	165,328	35,820	11,357	16,448	5,778	86,715	987	6,460	1,763
Louisiana State Univ Sys	151,433	31,768	9,912	16,303	2,361	83,973	876	5,083	1,157
Louisiana Tech University	2,759	2,015i	1i	0i	0i	743i	0i	0i	0i
Northeast Louisiana Univ	904	0	0	23	15	248	0	618	0
Univ of Southwestern LA	10,232	2,037	1,444	122	3,402	1,751	111	759	606
Private, total	74,205	4,317	2,265	139	759	57,474	473	7,527	1,251
Tulane University	71,781	4,317	1,734	139	759	55,581	473	7,527	1,251
Xavier University of LA	2,424	0	531	0	0	1,893	0	0	0
Maine, total	27,082	3,724	685	5,107	66	15,586	292	1,622	0
Public, total	27,082	3,724	685	5,107	66	15,586	292	1,622	0
Univ of Maine Orono	27,082	3,724	685	5,107	66	15,586	292	1,622	0
Maryland, total	1,078,068	254,837	190,173	64,050	97,308	435,128	5,071	17,972	13,529
Public, total	367,973	38,270	71,331	24,504	9,906	212,587	3,828	7,547	0
U of MD Baltimore County	6,809	1,384	1,819	0	728	1,449	489	940	0
U of MD Center For EES	16,205	0	0	16,205	0	0	0	0	0
U of MD Eastern Shore	1,620	18	65	67	40	1,372	0	58	0
Unif Serv Univ of Hlth Sc	47,096	0	0	0	0	47,096	0	0	0
Univ of MD Balt Prof Sch	89,811	0	0	0	0	89,811	0	0	0
Univ of MD College Park	206,432	36,868	69,447	8,232	9,138	72,859	3,339	6,549	0
Private, total	710,095	216,567	118,842	39,546	87,402	222,541	1,243	10,425	13,529
Johns Hopkins Univ	710,095	216,567	118,842	39,546	87,402	222,541	1,243	10,425	13,529
Massachusetts, total	948,938	177,880	168,471	97,039	39,777	363,689	16,701	64,167	21,214
Public, total	132,060	13,642	19,203	7,043	9,650	72,100	3,215	4,927	2,280
Univ of Massachusetts	119,657	9,717	15,937	6,908	8,920	69,401	3,209	4,908	657
University of Lowell	12,403	3,925	3,266	135	730	2,699	6	19	1,623
Private, total	816,878	164,238	149,268	89,996	30,127	291,589	13,486	59,240	18,934
Boston College	9,810	0	3,084	439	5,222	722	78	265	0
Boston University	74,881	4,677	9,359	169	1,750	53,665	434	1,446	3,381
Brandeis University	33,837	0	3,596	0	911	15,608	1,345	12,377	0
Clark University	1,314	0	559	385	51	63	207	49	0
Harvard University	229,939	2,346	25,868	7,499	3,753	144,264	2,302	39,711	4,196
Mass Col Phar/Allied Hlth	215	0	0	0	0	215	0	0	0
Mass Inst of Technology	318,901	132,421	101,286	12,580	15,963	34,398	7,481	3,461	11,311
Northeastern University	15,973	5,925	3,442	359	1,694	3,447	701	370	35
Smith College	1,392i	0i	188i	186i	122i	303i	157i	436i	0i
Tufts University	47,748	2,307	1,401	3,565	94	38,493	781	1,107	0
Woods Hole Ocngrphic Inst	76,979e	12,165i	0i	64,814i	0i	0i	0i	0i	0i
Worcester Poly Institute	5,889	4,397	485	0	567	411	0	18	11
Michigan, total	601,189	100,539	55,038	21,483	16,387	325,005	11,502	53,754	17,481
Public, total	599,484	99,535	54,873	21,482	16,385	324,828	11,393	53,567	17,421
Central Michigan Univ	1,066	100	96	129	112	127	5	77	420
Michigan State University	133,249	15,340i	22,015i	1,842i	504i	76,581i	3,081i	6,948i	6,938i
Michigan Tech University	19,667	12,326	1,633	435	201	3,072	0	1,204	796
Oakland University	5,912	673	568	0	538	3,695	129	151	158

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and Institution	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
Michigan, continued									
Public, continued									
University of Michigan	363,582	63,841	21,419	17,742	13,645	191,582	6,960	41,259	7,134
Wayne State University	69,997	5,624	8,896	0	1,055	49,221	1,189	2,042	1,970
Western Michigan Univ	6,011	1,631	246	1,334	330	550	29	1,886	5
Private, total	1,705	1,004	165	1	2	177	109	187	60
Andrews University	255	1	12	1	2	91	0	148	0
University of Detroit	1,450	1,003i	153i	0i	0i	86i	109i	39i	60i
Minnesota, total	331,471	27,460	18,143	12,053	30,917	222,512	7,622	12,188	576
Public, total	331,471	27,460	18,143	12,053	30,917	222,512	7,622	12,188	576
University of Minnesota	331,471	27,460	18,143	12,053	30,917	222,512	7,622	12,188	576
Private, total	0	0	0	0	0	0	0	0	0
Mayo Grad School of Med	0	0	0	0	0	0	0	0	0
Mississippi, total	96,471	18,236	13,774	1,999	214	52,240	445	4,398	5,165
Public, total	96,471	18,236	13,774	1,999	214	52,240	445	4,398	5,165
Mississippi State Univ	64,335	15,360	2,011	1,427	123	36,510	3	3,736	5,165
Univ of Sthrn Mississippi	7,388	114	5,864	572	75	535	175	53	0
University of Mississippi	24,748	2,762	5,899	0	16	15,195	267	609	0
Missouri, total	305,780	23,747	16,769	4,615	8,120	239,421	2,028	8,503	2,577
Public, total	125,509	20,794	10,552	1,976	2,164	78,776	1,293	7,382	2,572
Univ of Missouri Columbia	96,748	9,937	5,123	1,204	359	72,022	1,211	6,481	411
Univ of Missouri Kan City	8,300	0	424	87	1,289	5,544	6	574	376
Univ of Missouri Rolla	14,432	10,286	2,241	456	386	136	18	11	898
Univ of Missouri St Louis	2,468	0	1,144	0	130	385	58	316	435
Univ of Missouri Sys Off	3,561	571	1,620	229	0	689	0	0	452
Private, total	180,271	2,953	6,217	2,639	5,956	160,645	735	1,121	5
Kirksville Col Osteo Med	624	0	0	0	0	624	0	0	0
St Louis University	19,183	0	0	652	33	18,493	0	0	5
Univ of Health Sciences	0	0	0	0	0	0	0	0	0
Washington University	160,464	2,953	6,217	1,987	5,923	141,528	735	1,121	0
Montana, total	38,149	4,330	3,878	586	485	25,415	76	2,616	763
Public, total	38,149	4,330	3,878	586	485	25,415	76	2,616	763
Montana State University	30,278	4,330	3,554	469	315	20,272	12	1,326	0
University of Montana	7,871	0	324	117	170	5,143	64	1,290	763
Nebraska, total	123,711	12,377	5,135	5,657	1,267	96,080	315	2,808	72
Public, total	115,387	12,377	5,135	5,657	1,267	87,756	315	2,808	72
U of Neb Med Ctr at Omaha	27,858	0	0	0	0	27,858	0	0	0
Univ of Nebraska-Lincoln	87,529	12,377	5,135	5,657	1,267	59,898	315	2,808	72
Private, total	8,324	0	0	0	0	8,324	0	0	0
Creighton University	8,324	0	0	0	0	8,324	0	0	0
Nevada, total	66,742	4,069	1,640	23,562	11,227	14,285	81	4,420	7,458
Public, total	66,742	4,069	1,640	23,562	11,227	14,285	81	4,420	7,458
Desert Research Institute	17,948	0	0	14,043	0	1,928	0	1,977	0
Univ of Nevada - Reno	29,303	3,465	1,165	4,132	28	11,816	57	1,603	7,037
Univ of Nevada, Las Vegas	19,491	604	475	5,387	11,199	541	24	840	421

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and Institution	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
New Hampshire, total	78,975	8,176	3,068	16,538	1,206	41,938	481	2,255	5,313
Public, total	29,591	3,098	918	15,375	457	6,301	134	1,991	1,317
Univ of New Hampshire	29,591	3,098	918	15,375	457	6,301	134	1,991	1,317
Private, total	49,384	5,078	2,150	1,163	749	35,637	347	264	3,996
Dartmouth College	49,384	5,078	2,150	1,163	749	35,637	347	264	3,996
New Jersey, total	342,564	58,833	43,036	20,776	22,189	156,697	11,527	24,188	5,318
Public, total	241,247	31,205	18,776	13,457	13,989	138,037	5,894	14,571	5,318
N J Inst of Technology	16,463	6,614	397	5,548	698	0	0	133	3,073
Rutgers the St Univ of NJ	151,335	24,591	18,379	7,909	13,291	64,588	5,894	14,438	2,245
Univ of Med & Dent of N J	73,449	0	0	0	0	73,449	0	0	0
Private, total	101,317	27,628	24,260	7,319	8,200	18,660	5,633	9,617	0
Fairleigh Dickinson Univ	859	25	0	345	0	39	395	55	0
Princeton University	92,002	20,134	23,478	6,974	8,103	18,513	5,238	9,562	0
Seton Hall University	153i	0i	45i	0i	0i	108i	0i	0i	0i
Stevens Institute of Tech	8,303	7,469	737	0	97	0	0	0	0
New Mexico, total	162,850	77,413	7,985	8,397	9,535	48,167	942	6,450	3,961
Public, total	162,850	77,413	7,985	8,397	9,535	48,167	942	6,450	3,961
N Mex Inst Mining & Tech	16,770e	11,239i	1,611i	3,663i	154i	103i	0i	0i	0i
New Mexico State Univ	78,736	44,091	3,093	3,089	8,755	18,183	45	1,007	493
University of New Mexico	67,344	22,083	3,281	1,665	626	29,881	897	5,443	3,468
New York, total	1,467,204	183,826	148,837	61,878	72,011	924,106	27,858	43,777	4,911
Public, total	350,159	38,508	43,902	22,543	11,878	205,841	12,235	13,344	1,908
CUNY City College	15,451	4,834	5,879	281	248	3,301	340	101	467
CUNY Grad Sch & Univ Ctr	2,554	0	0	0	862	1,048	346	236	62
CUNY Hunter College	8,075	0	2,841	504	232	3,044	903	525	26
SUNY Col of Env Sci & For	19,049	7,139	1,411	1,864	299	7,892	0	444	0
SUNY Hlth Sci Ctr - Brkln	32,824	0	0	0	0	32,824	0	0	0
SUNY Hlth Sci Ctr - Syrcs	37,294	0	0	0	0	37,294	0	0	0
SUNY St Coll of Optometry	231	0	0	0	0	231	0	0	0
SUNY at Albany	20,580	0	2,701	7,556	836	2,844	2,947	3,696	0
SUNY at Binghamton	9,870	1,014	2,172	618	537	1,438	2,225	1,866	0
SUNY at Buffalo	113,441	22,881	7,432	580	4,728	69,283	3,681	4,168	688
SUNY at Stony Brook	90,790	2,640	21,466	11,140	4,136	46,642	1,793	2,308	665
Private, total	1,117,045	145,318	104,935	39,335	60,133	718,265	15,623	30,433	3,003
Adelphi University	630i	0i	487i	0i	0i	86i	57i	0i	0i
Albany Medical College	10,131	0	0	0	0	10,131	0	0	0
Alfred University	3,911	3,911	0	0	0	0	0	0	0
CUNY Mt Sinai Sch of Med	66,310	0	0	0	0	66,310	0	0	0
Clarkson University	9,125	6,370	1,833	0	436	404	75	0	7
Columbia U Teachers Col	429	0	0	0	0	0	355	74	0
Columbia Univ Main Div	194,666	16,785	16,929	29,777	4,906	119,235	1,653	5,381	0
Cornell University	309,535	43,632	45,572	6,496	27,194	171,008	3,514	11,865	254
Fordham University	1,816	0	163	4	53	593	1	1,002	0
Hofstra University	493	214	40	0	25	214	0	0	0
Long Island University	170	0	75	1	5	44	1	44	0
New Sch For Soc Research	1,164	0	0	0	0	0	326	838	0
New York Inst Technology	2,900e	698i	268i	0i	1,396i	538i	0i	0i	0i
New York Medical College	14,633	0	0	0	0	14,633	0	0	0
New York University	112,106	0	4,535	67	10,557	87,436	3,458	5,024	1,029
Polytechnic University	9,272	6,683	2,438	0	66	0	0	0	85
Rensselaer Polytech Inst	50,106	37,927	5,256	1,177	2,849	1,044	146	441	1,266
Rockefeller University	74,090	0	9,031	0	507	64,552	0	0	0
St John's University (NY)	593	0	0	0	0	425	158	10	0
Syracuse University	30,606	5,255	5,169	1,250	9,688	5,106	472	3,634	32
Union College (NY)	5,861	1,539	1,094	196	688	781	345	1,218	0
University of Rochester	131,777	22,304	12,045	367	1,763	89,004	5,062	902	330
Yeshiva University	86,721	0	0	0	0	86,721	0	0	0

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and institution	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
North Carolina, total	501,841	52,855	25,521	17,383	17,477	362,542	4,116	21,692	255
Public, total	293,395	46,343	14,129	14,586	15,002	186,005	1,985	15,295	50
East Carolina University	6,119	0	52	1,065	0	4,484	0	480	38
N C State Univ at Raleigh	142,606	46,343	7,091	6,584	5,814	73,215	137	3,422	0
Univ of N C at Greensboro	1,989	0	21	0	19	1,231	603	103	12
Univ of NC at Chapel Hill	142,681	0	6,965	6,937	9,169	107,075	1,245	11,290	0
Private, total	208,446	6,512	11,392	2,797	2,475	176,537	2,131	6,397	205
Duke University	164,232	6,512	10,690	2,797	2,396	133,314	2,131	6,392	0
Wake Forest University	44,214	0	702	0	79	43,223	0	5	205
North Dakota, total	30,816	10,263	1,693	2,731	396	12,492	164	2,101	976
Public, total	30,816	10,263	1,693	2,731	396	12,492	164	2,101	976
North Dakota State Univ	13,821	1,902	1,662	57	396	8,355	154	1,041	254
University of N Dakota	16,995	8,361	31	2,674	0	4,137	10	1,060	722
Ohio, total	503,725	138,643	47,565	7,133	9,500	255,523	5,244	24,089	16,028
Public, total	361,601	81,213	41,384	6,526	7,696	183,265	4,016	21,473	16,028
Air Force Inst of Tech/Nr	2,243	877	614	44	708	0	0	0	0
Bowling Green State Univ	3,729	273	1,109	23	97	1,228	455	138	406
Cleveland State Univ	10,205	4,410	964	1	48	456	16	4,310	0
Kent State University	8,469	150	4,681	238	1,079	981	932	246	162
Med Col of Ohio at Toledo	9,353	0	0	0	0	9,353	0	0	0
Miami University (Ohio)	3,087	79i	883i	129i	4i	794i	292i	412i	494i
NE Ohio Univ Med School	1,408	0	0	0	0	1,408	0	0	0
Ohio State University	194,919	42,950	13,659	5,266	3,469	101,655	558	15,160	12,202
Ohio University	12,796	6,678	1,304	151	33	4,170	334	126	0
University of Akron	13,405	5,197	6,357	89	528	370	306	558	0
University of Cincinnati	80,598	15,961	5,879	268	395	54,707	366	258	2,764
University of Toledo	6,743	2,230	3,572	29	80	447	255	130	0
Wright State University	14,646	2,408	2,362	288	1,255	7,696	502	135	0
Private, total	142,124	57,430	6,181	607	1,804	72,258	1,228	2,616	0
Antioch University	0	0	0	0	0	0	0	0	0
Case Western Reserve Univ	104,199	23,770	5,146	407	249	71,887	343	2,397	0
Union Institute	0	0	0	0	0	0	0	0	0
University of Dayton	37,925	33,660	1,035	200	1,555	371	885	219	0
Oklahoma, total	152,624	30,513	11,028	12,733	5,094	68,965	4,092	13,973	6,226
Public, total	147,269	26,927	10,792	12,572	4,879	68,100	3,892	13,881	6,226
Oklahoma State University	67,492	13,203	5,102	1,563	1,057	34,743	391	7,968	3,465
University of Oklahoma	79,777	13,724	5,690	11,009	3,822	33,357	3,501	5,913	2,761
Private, total	5,355	3,586	236	161	215	865	200	92	0
Oral Roberts University	37	16	2	0	10	9	0	0	0
University of Tulsa	5,318	3,570	234	161	205	856	200	92	0
Oregon, total	179,340	12,917	18,947	26,823	4,930	105,653	3,522	5,606	942
Public, total	168,180	9,969	15,221	24,225	3,042	105,653	3,522	5,606	942
Oregon Hlth Sciences Univ	41,661	0i	0i	0i	0i	40,272i	1,389i	0i	0i
Oregon State University	96,199	8,226	3,747	21,144	2,001	57,612	63	2,748	658
Portland State University	4,169	804	470	323	308	498	27	1,576	163
University of Oregon	26,151	939	11,004	2,758	733	7,271	2,043	1,282	121
Private, total	11,160	2,948	3,726	2,598	1,888	0	0	0	0
Oregon Grad Inst Sci/Tech	11,160	2,948	3,726	2,598	1,888	0	0	0	0

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and Institution	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
Pennsylvania, total	879,004	195,537	63,241	19,567	62,777	460,380	18,654	45,299	13,549
Public, total	453,059	127,132	29,468	15,783	6,248	229,152	10,878	24,742	9,656
Pennsylvania State Univ	267,816	120,336	16,158	15,536	3,870	86,055	5,768	11,274	8,819
Temple University	54,921	282	2,458	26	506	38,985	2,874	9,768	22
University of Pittsburgh	130,322	6,514	10,852	221	1,872	104,112	2,236	3,700	815
Private, total	425,945	68,405	33,773	3,784	56,529	231,228	7,776	20,557	3,893
Bryn Mawr College	2,490	0	896	241	185	408	40	722	0
Carnegie-Mellon Univ	103,030	24,615	6,760	2,127	46,912	12,568	4,232	4,276	1,540
Drexel University	19,705	12,506	2,558	800	911	1,446	141	1,343	0
Duquesne University	572	0	83	0	0	480	0	9	0
Hahnemann University	13,536i	0i	0i	0i	0i	12,080i	1,456i	0i	0i
Lehigh University	27,912	20,185	4,995	413	616	843	246	614	0
Phila Col Osteopathic Med	339i	0i	0i	0i	0i	339i	0i	0i	0i
Phila Col of Pharm & Sci	968	0	0	0	0	968	0	0	0
The Medical Col of Penna	24,645	0	0	0	0	24,645	0	0	0
Thomas Jefferson Univ	33,066	0	0	0	0	33,066	0	0	0
Univ of Pennsylvania	198,221	10,620	18,260	203	7,804	143,981	1,516	13,484	2,353
Villanova University	1,461	479	221	0	101	406	145	109	0
Rhode Island, total	88,448	14,644	7,877	22,683	7,538	27,855	4,148	2,913	790
Public, total	38,842	4,708	957	17,442	234	9,796	2,646	2,269	790
Univ of Rhode Island	38,842	4,708	957	17,442	234	9,796	2,646	2,269	790
Private, total	49,606	9,936	6,920	5,241	7,304	18,059	1,502	644	0
Brown University	49,503	9,936	6,907	5,241	7,303	17,979	1,502	635	0
Providence College	103	0	13	0	1	80	0	9	0
South Carolina, total	151,204	32,975	9,379	9,979	8,035	76,303	2,112	11,435	986
Public, total	151,204	32,975	9,379	9,979	8,035	76,303	2,112	11,435	986
Clemson University	70,236	18,715	4,097	193	6,420	34,752	214	5,763	82
Med Univ of S. Carolina	25,877	0	0	0	0	25,877	0	0	0
Univ of South Carolina	55,091	14,260	5,282	9,786	1,615	15,674	1,898	5,672	904
South Dakota, total	15,959	1,573	447	2,515	6	10,040	78	1,070	230
Public, total	15,959	1,573	447	2,515	6	10,040	78	1,070	230
S Dak Sch Mines & Tech	2,850	899	101	1,620	0	0	0	0	230
South Dakota State Univ	11,511	674	197	887	0	9,138	0	615	0
Univ of South Dakota	1,598	0	149	8	6	902	78	455	0
Tennessee, total	240,054	49,010	18,744	13,135	8,352	135,404	4,993	9,368	1,048
Public, total	152,046	40,456	12,098	13,003	7,642	68,419	3,095	6,285	1,048
East Tennessee State Univ	1,740	0	31	122	0	1,571	0	16	0
Memphis State University	12,000	1,397	322	3,047	476	2,167	2,716	1,875	0
Tenn Technological Univ	9,888	8,242	347	17	207	1,047	0	28	0
Univ. Of Tennessee System	128,418	30,817	11,398	9,817	6,959	63,634	379	4,366	1,048
Private, total	88,008	8,554	6,646	132	710	66,985	1,898	3,083	0
Meharry Medical College	7,249	0	0	0	0	7,249	0	0	0
Vanderbilt University	80,759	8,554	6,646	132	710	59,736	1,898	3,083	0
Texas, total	1,215,523	196,222	124,557	110,965	41,227	677,614	9,069	37,300	18,569
Public, total	1,010,505	190,996	112,777	104,233	30,233	511,264	6,745	36,889	17,368
East Texas State Univ	260	0	208	0	0	41	1	10	0
Lamar University	2,898	2,148	215	144	190	67	27	107	0
Sam Houston State Univ	1,238	0	330	7	156	88	24	633	0
Stephen F Austin St Univ	1,178	0	169	14	21	954	3	17	0

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and Institution	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
Texas, continued									
Public, continued									
Texas A & M University	288,005	65,627	17,230	69,272	6,299	111,045	758	8,852	8,924
Texas Col of Osteo Med	3,504	0	0	0	0	3,504	0	0	0
Texas Tech University	34,994	8,902	3,276	687	768	17,260	105	3,299	697
Texas Woman's University	1,359	0	45	0	11	1,283	6	14	0
U Tex Hlth Sci Ctr Houstn	53,896	0	0	0	0	53,402	0	494	0
U Tex Hlth Sci Ctr S Anto	51,768	0	0	0	0	51,768	0	0	0
U Tex Med Brnch Galveston	45,086	0	0	0	0	45,086	0	0	0
U of Houston	42,292	14,396	16,868	1,145	825	5,253	2,167	1,143	495
UT MD Anderson Cancer Ctr	106,968	0	4,163	0	2,483	102,322	0	0	0
UT SW Medical Ctr-Dallas	94,511	0	0	0	0	94,511	0	0	0
Univ of North Texas	10,580	502	2,479	1,674	1,854	1,919	274	855	1,023
Univ of Tex at Arlington	12,887	8,240	2,313	401	980	599	99	182	73
Univ of Texas at Austin	237,043	86,521	59,024	28,919	15,645	18,726	2,608	19,674	5,926
Univ of Texas at Dallas	10,571	738	5,058	1,424	379	1,942	216	584	230
Univ of Texas at El Paso	9,447	3,922	1,379	546	622	1,494	459	1,025	0
Private, total	205,018	5,226	11,780	6,732	10,994	166,350	2,324	411	1,201
Baylor Col of Dentistry	824	0	0	0	0	824	0	0	0
Baylor Col of Medicine	161,084	0	0	0	0	161,084	0	0	0
Baylor University	1,067	0	788	40	66	173	0	0	0
Rice University	30,577	4,304	9,274	2,685	10,261	3,373	409	271	0
Southern Methodist Univ	8,607	922	864	3,991	652	680	184	113	1,201
Texas Christian Univ	2,859	0	854	16	15	216	1,731	27	0
Utah, total	201,470	65,316	16,507	15,582	5,451	85,363	2,510	2,223	8,518
Public, total	188,788	59,958	13,889	15,472	5,193	82,955	2,495	1,621	7,205
University of Utah	94,621	15,116	8,859	3,659	4,691	60,708	1,035	553	0
Utah State University	94,167	44,842	5,030	11,813	502	22,247	1,460	1,068	7,205
Private, total	12,682	5,358	2,618	110	258	2,408	15	602	1,313
Brigham Young University	12,682	5,358	2,618	110	258	2,408	15	602	1,313
Vermont, total	46,541	997	995	437	316	42,285	1,137	88	286
Public, total	46,541	997	995	437	316	42,285	1,137	88	286
U of VT & State Agr Coll	46,541	997	995	437	316	42,285	1,137	88	286
Virginia, total	337,874	76,581	28,017	25,712	9,781	179,117	5,005	13,445	216
Public, total	324,614	75,142	27,688	25,592	9,521	168,005	5,005	13,445	216
College of William & Mary	18,508	0	3,542	12,784	1,009	702	190	281	0
George Mason University	8,469	5,109	210	45	334	410	541	1,820	0
Old Dominion U Res Fdn	10,040	3,758	1,181	1,642	1,080	2,317	62	0	0
University of Virginia	96,733	17,748	11,476	4,827	4,275	50,807	2,534	4,850	216
VA Polytech Inst & St U	125,256	48,407	9,562	6,294	2,620	52,164	1,253	4,956	0
Virginia Commonwlth Univ	65,606	120	1,717	0	203	61,605	425	1,538	0
Private, total	13,260	1,439	329	120	260	11,112	0	0	0
Eastern VA Medical School	11,112	0	0	0	0	11,112	0	0	0
Institute of Textile Tech	2,148	1,439	329	120	260	0	0	0	0
Washington, total	349,667	27,289	17,296	23,588	9,170	224,437	5,495	15,235	27,157
Public, total	349,667	27,289	17,296	23,588	9,170	224,437	5,495	15,235	27,157
University of Washington	274,423	20,497	15,182	22,771	8,633	172,710	5,256	6,942	22,432
Washington State Univ	75,244	6,792	2,114	817	537	51,727	239	8,293	4,725
West Virginia, total	50,772	7,005	1,781	5,273	10,144	24,355	102	1,589	523
Public, total	50,772	7,005	1,781	5,273	10,144	24,355	102	1,589	523
Marshall University	918	0	6	0	0	904	5	3	0
W VA Schl Osteopathic Med	168	0i	0i	0i	0i	168i	0i	0i	0i

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-31. R&D expenditures at doctorate-granting institutions, by State, control, and science and engineering field: fiscal year 1991

[Dollars in thousands]

State and Institution	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psychology	Social sciences	Other sciences
West Virginia, continued									
Public, continued									
West Virginia University	49,686	7,005	1,775	5,273	10,144	23,283	97	1,586	523
Wisconsin, total	387,621	47,714	36,306	23,935	8,478	231,863	10,129	26,243	2,951
Public, total	343,354	46,339	35,862	23,935	8,283	190,246	9,966	26,000	2,723
Univ of Wis-Madison	326,489	43,341	32,841	21,194	8,137	187,200	9,469	22,608	1,699
Univ of Wis-Milwaukee	16,865	2,998	3,021	2,741	146	3,046	497	3,392	1,024
Private, total	44,267	1,375	446	0	195	41,617	163	243	228
Marquette University	3,821	1,375	446	0	195	1,171	163	243	228
Medical College of Wis	40,446	0	0	0	0	40,446	0	0	0
Wyoming, total	23,009	2,603	2,005	3,460	448	12,558	339	88	1,508
Public, total	23,009	2,603	2,005	3,460	448	12,558	339	88	1,508
University of Wyoming	23,009	2,603	2,005	3,460	448	12,558	339	88	1,508
Puerto Rico, total	45,747	1,673	1,428	1,459	137	38,781	37	1,120	1,112
Public, total	43,306	1,673	1,211	1,459	137	36,649	37	1,028	1,112
Univ of P R-Mayaguez	31,938i	1,673i	174i	1,459i	30i	28,448i	23i	0i	131i
Univ of P R-Med Sci Cmpus	6,310	0	0	0	0	6,310	0	0	0
Univ. of Puerto Rico	5,058	0	1,037	0	107	1,891	14	1,028	981
Private, total	2,441	0	217	0	0	2,132	0	92	0
Catholic U of PR	217	0	217	0	0	0	0	0	0
Ponce School of Medicine	1,372	0	0	0	0	1,372	0	0	0
U Ctrl Del Caribe Esc Med	852	0	0	0	0	760	0	92	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY: e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
Total, all institutions	17,620,209	16,344,278	15,016,117	13,465,794	12,153,776	10,927,655	9,686,030	8,619,762
1 Johns Hopkins Univ 1/	710,095	668,915	648,395	557,016	510,896	440,844	398,630	350,891
2 University of Michigan	363,582	310,578	280,905	250,169	224,890	187,859	163,713	155,987
3 University of Minnesota	331,471	292,046	258,614	236,115	222,381	201,743	173,322	158,223
4 Univ of Wis-Madison	326,489	309,841	285,982	271,418	254,493	231,099	208,425	184,190
5 Mass Inst of Technology 2/	318,901	311,767	287,157	270,584	264,416	257,726	242,966	222,134
6 Stanford University	310,429	299,511	285,994	277,504	240,885	223,162	199,185	174,675
7 Cornell University 2/	309,535	300,144	286,733	271,659	253,971	225,400	203,226	169,450
8 Texas A & M University	288,005	272,800	250,706	231,161	219,853	207,362e	184,899e	157,397e
9 University of Washington	274,423	245,313	221,712	190,735	187,062	186,572	163,962	146,947
10 Univ of Cal San Francisco	268,700	238,278	219,446	193,289	169,436	147,785	131,348	113,404
Total, 1st 10 insts.	3,501,630	3,249,193	3,025,644	2,749,650	2,548,283	2,309,552	2,069,676	1,833,298
11 Pennsylvania State Univ	267,816	256,926	219,930	188,444	165,841	146,270	113,196	95,061
12 Univ of Cal San Diego	261,422	237,032	216,991	200,472	183,047	161,054	145,550	140,987
13 Univ of Cal Berkeley 2/	258,038	231,061	209,967	186,372	175,273	158,990	149,900	133,811
14 Univ of Cal Los Angeles	250,033	246,795	227,828	209,338	188,831	168,158	149,744	132,134
15 University of Ill Urbana	243,380	225,634	210,590	197,393	188,682	158,947	139,563	119,198
16 Univ of Texas at Austin	237,043	228,203	193,337	172,608	168,931	145,324	126,657	114,664
17 Harvard University	229,939	220,812	209,519	190,429	169,074	154,390	138,063	124,330e
18 University of Arizona	213,726	195,633	174,119	155,464	138,726	124,790	105,765	94,946
19 Univ of MD College Park	206,432	166,022	149,510	135,531	126,239	101,650	91,905	79,857
20 Univ of Cal Davis	200,664	198,075	180,297	154,655	143,798	123,788	114,862	105,791
Total, 1st 20 insts.	5,870,123	5,455,386	5,017,732	4,540,356	4,196,725	3,752,913	3,344,881	2,974,077
21 Univ of Pennsylvania	198,221	189,390	173,744	159,218	158,334	152,746	130,397	121,963
22 Ohio State University	194,919	178,569	173,485	154,652	123,246	112,623	103,350	87,402
23 Columbia Univ Main Div	194,666	182,769	172,145	160,976	149,904	145,416	136,577	124,292
24 Yale University	193,893	180,706	171,139	162,188	145,818	136,072	117,023	103,711
25 Georgia Institute of Tech	176,729	168,193	174,664	143,051	120,342	105,457	90,445	86,507
26 Univ of Southern Cal	175,595	169,102	162,013	150,009	134,995	116,399	97,282	87,278
27 Duke University	164,232	140,708	131,090	113,968	89,556	78,831	68,899	61,025
28 University of Georgia	162,992	156,742	145,953	137,692	124,442	111,745	91,253	83,829
29 Univ. of Colorado	161,970	154,723	143,720	128,015	112,276	104,576	93,416	85,433
30 Baylor Col of Medicine	161,084	155,122	134,681	106,814	90,179	68,993	63,197	56,746
Total, 1st 30 insts.	7,654,424	7,131,410	6,600,366	5,956,939	5,445,817	4,885,771	4,336,720	3,874,263
31 Washington University	160,464	151,249	128,419	117,829	103,419	90,226	80,233	77,392
32 Louisiana State Univ Sys	151,433	135,849	122,357	114,698	102,070	91,709	90,280	74,676
33 Rutgers the St Univ of NJ	151,335	137,985	124,574	105,150	94,555	79,894	59,392	51,568
34 Northwestern University	144,809	133,151	118,991	102,755	88,920	80,178	72,337	68,246
35 Univ of NC at Chapel Hill	142,681	123,113	122,097	107,039	93,754	85,454	75,958	53,960
36 N C State Univ at Raleigh	142,606	131,133	123,441	110,286	102,647	92,695	87,996	75,824
37 University of Florida	140,257	139,678	125,770	107,177	104,245	95,527	91,298	85,057
38 Purdue University	136,325	130,379	124,323	118,797	107,131	102,126	88,866	83,478
39 Iowa St U of Sci & Tech 2/	134,657	116,270	103,241	86,726	78,351	72,642	67,276	62,472
40 Michigan State University	133,249	126,987	121,456	116,320	111,810	100,861	92,515	85,426
Total, 1st 40 insts.	9,092,240	8,457,204	7,815,035	7,043,716	6,432,719	5,777,083	5,142,871	4,592,362
41 University of Rochester 2/	131,777	129,011	123,997	114,061	101,598	95,824	86,650	73,970
42 University of Pittsburgh	130,322	117,716	111,265	98,609	84,183	74,059	63,796	53,540
43 Univ. Of Tennessee System	128,418	116,644	113,187	104,179	91,417	80,156	71,615	60,039
44 VA Polytech Inst & St U	125,256	121,423	104,266	89,955	80,552	75,450	61,966	53,113
45 University of Iowa	124,058	115,778	105,900	94,552	79,090	73,596	64,923	56,770
46 Univ of Massachusetts	119,657	101,812	110,644	93,117	79,814	73,453	60,771	52,965
47 University of Connecticut	119,526	113,349	109,328	89,630	81,575	74,287	75,155	69,167
48 University of Chicago 2/	117,344	117,955	109,429	98,541	91,879	88,026	79,929	77,022
49 California Inst of Tech 2/	115,526	105,730	98,731	92,530	86,565	78,776	65,810	50,409
50 SUNY at Buffalo	113,441	109,190	100,291	87,635	70,474	64,404	57,045	52,711
Total, 1st 50 insts.	10,317,565	9,605,812	8,902,073	8,006,525	7,279,866	6,555,114	5,830,531	5,192,068

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
51 Univ Alabama Birmingham	113,317	110,603	100,666	85,030	72,692	59,401	47,167	40,407
52 New York University	112,106	108,511	104,451	100,872	98,924	92,787	83,896	73,688
53 UT MD Anderson Cancer Ctr	108,988	91,283	85,903	75,642	65,417	63,318	56,137	49,317
54 Case Western Reserve Univ	104,199	93,384	86,168	77,303	70,850	57,530e	51,598	47,217
55 Carnegie-Mellon Univ 2/	103,030	100,201	101,635	94,051	83,763	71,920	60,292	53,787
56 Indiana University	102,461	89,191	81,793	73,526	65,341	59,160	54,796	47,645
57 University of Miami	96,979	94,344	90,298	70,783	65,158	64,154	58,035	51,057
58 Univ of Missouri Columbia	96,748	88,181	74,055	66,365	61,212	57,653	50,765	46,075
59 University of Virginia	96,733	96,815	81,281	74,572	63,861	57,472	51,653	41,815
60 Oregon State University	96,199	90,688	91,355	88,953	82,786	78,168	74,768	67,320
Total, 1st 60 insts.	11,348,325	10,569,013	9,799,678	8,813,622	8,009,870	7,216,677	6,419,638	5,710,396
61 University of Utah	94,621	89,018	83,340	75,789	68,194	60,478	54,354	50,416
62 UT SW Medical Ctr-Dallas	94,511	85,919	79,920	70,392	62,907	52,619	46,671	42,461
63 Utah State University	94,167	86,450	69,944	59,273	41,343	42,351	37,526	36,642
64 Princeton University 2/	92,002	91,514	82,914	76,891	65,089	51,789	46,027	40,877
65 Emory University	91,940	82,774	64,713	60,896	58,889	51,115	30,706	27,522
66 SUNY at Stony Brook	90,790	82,236	79,455	79,410	54,650	54,197	47,495	41,848
67 Univ of Ill Chicago	90,520	85,268	83,329	75,922	64,701	54,846	48,734	44,544
68 Univ of MD Balt Prof Sch	89,811	83,689	75,854	68,787	57,931	36,934	32,097i	27,261i
69 Univ of Nebraska-Lincoln	87,529	77,598	68,281	60,788	56,066	55,158	47,809	42,920
70 Yeshiva University	86,721	83,968	74,496	75,383	73,773	70,260	66,656	58,893
Total, 1st 70 insts.	12,260,937	11,417,447	10,561,924	9,517,153	8,613,613	7,746,424	6,877,713	6,123,780
71 Univ of Cal Irvine	82,523	78,074	66,806	60,100	51,691	49,979	44,458	37,023
72 University of Kentucky	81,137	74,959	69,532	69,003	55,042	53,770	47,387	45,058
73 Vanderbilt University	80,759	75,062	65,218	60,591	43,589	37,715	34,180	29,760
74 University of Cincinnati	80,598	74,461	69,831	60,479	53,804	44,368	42,709	39,747
75 Colorado State University	80,474	73,967	64,351	59,369	52,619	49,359	44,171	42,876
76 University of Oklahoma	79,777	58,645	53,956	50,047	45,350	37,328	42,290	40,129
77 New Mexico State Univ	78,736	71,288	60,930	61,001	58,672	51,917	46,198	41,646
78 Univ of Hawaii-Manoa	78,166	76,525	70,733	64,278	57,345	57,383	54,025	51,051
79 Woods Hole Ocngrphic Inst	76,979e	71,747	74,881	58,700	48,061	43,675	43,132	43,454
80 Washington State Univ	75,244	66,856	55,173	51,319	48,865	46,392	45,878	38,304
Total, 1st 80 insts.	13,055,330	12,139,031	11,213,335	10,112,040	9,128,651	8,218,310	7,322,141	6,532,828
81 Boston University	74,881	73,651	66,325	61,505	58,299	53,225	44,135	39,272
82 Rockefeller University	74,090	75,245	73,945	68,588	66,760	63,216	59,159	55,353
83 Univ of Med & Dent of N J	73,449	64,229	54,451	42,027	32,222	30,322	23,521	20,113
84 Univ of South Florida	72,948	76,404	60,973	40,396	38,633	11,707	9,186	8,251
85 Tulane University	71,781	56,407	45,195	42,619	38,393	34,871	28,144	23,919
86 Clemson University	70,236	66,664	56,699	49,375	46,495	38,963	32,326	29,900
87 Wayne State University	69,997	62,455	59,521	50,509	39,335	33,589	27,941	26,386
88 Auburn University	69,913	66,795	53,814	52,737	48,045	47,930	36,279	29,977
89 Oklahoma State University	67,492	65,685	53,655	56,636	47,420	45,919	49,094	48,727
90 Univ of Alaska Fairbanks	67,432	65,571	56,701	49,856e	47,432i	45,008i	42,584i	40,160i
Total, 1st 90 insts.	13,767,549	12,812,137	11,794,614	10,626,288	9,591,685	8,623,060	7,674,510	6,854,886
91 University of New Mexico	67,344	57,728	52,970	47,729e	49,764e	49,856	45,581	33,161
92 CUNY Mt Sinai Sch of Med	66,310	63,752	56,856	49,727	46,137	40,193	37,750	31,273
93 University of Kansas	65,982	61,144	57,111	51,723	50,603	47,853	41,021i	34,192i
94 Virginia Commonwlth Univ	65,608	62,730	52,193	42,951	42,329	38,729	35,221	25,761
95 Mississippi State Univ	64,335	58,492	53,670	45,005	40,405	43,813	41,376	38,410
96 Arizona State University	63,489	59,849	44,347	39,510	38,763	33,580	28,953	22,048
97 Georgetown University	60,454	50,867	53,597	44,783	35,981	29,254	27,878	24,187
98 Univ of Cal Santa Barbara	59,593	59,750	50,067	46,598	42,704	36,516	30,055	27,404
99 Univ of Cal Riverside	57,244	54,892	53,213	52,983	51,158	47,881	44,233	40,233
100 Univ of South Carolina	55,091	47,477	40,421	31,836	29,658	28,362	22,765	17,830
Total, 1st 100 insts.	14,392,999	13,388,818	12,309,059	11,079,133	10,019,187	9,019,097	8,029,343	7,149,385

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
101 Temple University	54,921	49,449	45,482	40,941	36,013	32,610	26,668	25,601
102 U Tex Hlth Sci Ctr Houstn	53,896	45,707	46,860	43,345	35,158	32,564	26,566	20,526
103 Florida State University	53,811	62,933	55,245	50,679	46,420	44,179	34,969	29,840
104 Kans St U - Ag & App Sci	53,010	50,311	47,302	43,174	40,587	40,708	37,233	35,598
105 U Tex Hlth Sci Ctr S Anto	51,768	45,663	42,501	39,673	34,476	33,165	29,845	25,911
106 Rensselaer Polytech Inst	50,106	46,880	38,805	36,511	25,176	21,233	19,129	19,149
107 West Virginia University	49,686	46,624	37,569	28,807	25,676	23,376	21,462	19,183
108 Brown University	49,503	46,763	43,564	41,556	38,110	31,906	28,344	25,771
109 Dartmouth College	49,384	43,737	38,452	35,563	31,227	26,067i	20,908i	15,749
110 Tufts University	47,748	47,009	50,424	54,225	46,497	40,789i	35,082i	29,375i
Total, 1st 110 insts.	14,906,832	13,873,894	12,755,263	11,493,607	10,378,527	9,345,694	8,309,549	7,396,088
111 Unif Serv Univ of Hlth Sc	47,096	36,080	27,062	15,991	12,076	12,960	10,536	8,890
112 U of VT & State Agr Coll	46,541	45,162	42,743	36,815	31,547	29,699	27,606	22,268
113 U Tex Med Brnch Galveston	45,086	40,610	38,717	33,047	24,351	23,312i	22,273	19,515
114 University of Delaware	44,696	40,119	37,194	32,023	31,681	28,798	23,605	21,343
115 Wake Forest University	44,214	39,654	37,156	30,568	23,596	20,705i	17,818i	14,931i
116 U of Houston	42,292	37,978	34,229	26,803	24,378	22,053	16,011	14,007
117 Univ of Central Florida	41,935	30,618	30,991	11,307	9,571i	7,835e	6,114	7,047i
118 Oregon Hlth Sciences Univ	41,661	41,420	35,097	29,509	26,062	21,418	17,785	16,016
119 Univ of Ark Fayetteville	40,831	36,963	32,842	28,104	27,435	28,566	24,536	21,925
120 Medical College of Wis	40,446	34,622	34,951	33,231	30,218	21,356	19,859	18,015i
Total, 1st 120 insts.	15,341,630	14,257,120	13,106,245	11,771,005	10,619,442	9,562,396	8,495,692	7,560,045
121 University of Idaho	39,407	34,936	31,879	30,078	24,070	23,068	20,460	19,232
122 Univ of Rhode Island	38,842	35,846	36,219e	35,940	27,369	27,805i	28,241	23,481
123 University of Dayton	37,925	36,177	31,984	31,483	30,105	27,478	25,005	23,556
124 SUNY Hlth Sci Ctr - Syrcs	37,294	35,193	31,125	24,541	21,186	18,065	18,301	18,361
125 Texas Tech University	34,994	34,124	33,926	29,374	28,390	25,326	18,588	16,592i
126 Brandeis University	33,837	30,881	30,596	26,618	23,811i	21,006i	18,201	18,291
127 Thomas Jefferson Univ	33,066	30,969	29,405	24,231	20,357	12,402	11,969	10,593
128 SUNY Hlth Sci Ctr - Brkln	32,824	22,873	20,523	18,374	17,008	15,557i	14,107i	12,657
129 Univ of P R-Mayaguez	31,938i	30,555	29,343	27,091	24,491	22,728i	20,967i	19,206i
130 Univ of Cal Santa Cruz	31,620	26,347	23,651	22,163	22,222	17,818	17,400	14,509
Total, 1st 130 insts.	15,693,377	14,575,021	13,404,896	12,040,898	10,858,451	9,773,649	8,688,931	7,736,523
131 Syracuse University	30,606	33,811	35,543	33,643	30,348	27,289	24,340	16,859
132 Rice University	30,577	26,267	21,563	18,851	17,298i	15,747i	14,196	12,751i
133 Montana State University	30,278	27,648	25,968	25,227	23,093i	20,960	19,703	19,858
134 George Washington Univ	29,791	32,372	30,284	23,522	24,320	20,927i	17,534	19,693
135 Univ of New Hampshire	29,591	25,994	23,720	22,095	19,701	18,263	18,772	16,116
136 Univ of Nevada - Reno	29,303	21,449	18,141	17,867	15,171	13,114i	11,057i	9,000e
137 San Diego State Univ	28,570	22,524	20,124	19,370	16,973	9,958	8,043	6,256
138 Southern Ill U-Carbondale	28,340	25,873	23,357	20,310	18,654	18,814	18,371	15,581
139 Lehigh University	27,912	27,255	26,004	27,089	24,893	20,294	17,558	15,731
140 U of Neb Med Ctr at Omaha	27,858	17,844	17,291	14,684	12,492	11,759	10,262	8,501
Total, 1st 140 insts.	15,986,203	14,836,058	13,646,891	12,263,556	11,061,394	9,950,774	8,848,767	7,876,869
141 Univ Alabama Huntsville	27,499	29,565	26,186	18,628	11,158	7,284	5,415	4,242
142 Rush University	27,359	21,284	21,741	19,827	16,342	13,969	11,293	11,788
143 Univ of Maine Orono	27,082	23,605	19,974	17,341	16,952	19,315	20,621	17,107
144 University of Oregon	26,151	26,346	22,476	18,567	16,815	16,202	14,445	13,423
145 Med Univ of S. Carolina	25,877	23,128	23,017	20,949	19,658	19,278	13,677	11,796
146 University of Mississippi	24,748	22,071	17,092	15,125	13,377	12,970	9,484	9,516
147 The Medical Col of Penna	24,645	18,643	20,542	15,277	11,081	9,775i	8,469i	7,163
148 University of Wyoming	23,009	22,831	23,310	20,429	17,316	18,663	16,075	15,735
149 Loyola Univ - Chicago	22,702	12,260	11,303	8,327	7,123	6,375	5,364	5,035
150 University of Notre Dame	21,302	19,373	19,385	17,845	14,409	13,581	13,906	12,675
Total, 1st 150 insts.	16,236,577	15,055,164	13,851,917	12,435,871	11,205,625	10,088,186	8,967,516	7,985,349

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
151 The University of Alabama	21,248	21,488	18,395	15,836	13,362	11,221	7,799	5,894i
152 SUNY at Albany	20,580	22,034	24,240	19,625	18,815	16,433	13,016	11,421
153 Drexel University	19,705	20,079	17,983	16,045	15,803	14,247	11,817	7,897
154 Michigan Tech University	19,667	16,037	15,186	14,321	12,656	12,386	11,649	11,225
155 Univ of Nevada, Las Vegas	19,491	15,449i	11,409i	7,369	6,184i	5,000i	3,816i	2,632i
156 US Naval Postgrad School	19,397	17,391	15,306	15,515	13,053	13,216	12,212	10,986i
157 St Louis University	19,183	17,157	14,251	9,700	9,190i	8,684i	8,178i	7,672i
158 SUNY Col of Env Sci & For	19,049	18,671	17,221	12,917	11,690	11,249i	10,808	9,585i
159 Florida A & M University	18,552	15,847	14,171	12,079	9,364	8,401i	7,439	9,784
160 College of William & Mary	18,508	17,792	15,394	8,031	6,694	5,923	10,788	5,873
Total, 1st 160 insts.	16,431,957	15,237,109	14,015,473	12,567,309	11,322,436	10,194,946	9,065,038	8,068,318
161 Desert Research Institute	17,948	16,852	16,005	14,798	12,899	11,421	9,442	8,513
162 University of N Dakota	16,995	17,498	17,518	15,806	16,404	14,303i	12,202i	10,101i
163 Univ of Wis-Milwaukee	16,865	15,639	13,428	12,424	11,079	10,383	9,068	8,499
164 University of Louisville	16,852	15,921	14,466	22,945	22,966	14,782	6,403	7,589
165 N Mex Inst Mining & Tech	16,770e	22,911	22,289	20,357	23,709	16,796	13,209i	9,622
166 N J Inst of Technology	16,463	15,225	11,402	8,327	10,418	8,579	4,094	2,168
167 U of MD Center For EES	16,205	15,652	13,741	12,682	12,029	9,742	4,319	3,244
168 Northeastern University	15,973	14,347	13,302	11,894	10,124	9,243	8,883	8,217i
169 Howard University	15,731	17,382	17,125i	16,870i	16,615	16,305	12,798	13,034
170 CUNY City College	15,451	12,973	11,724	10,392	9,079	8,393i	7,707	6,919
Total, 1st 170 insts.	16,597,210	15,401,509	14,166,473	12,713,804	11,467,758	10,314,893	9,153,163	8,146,224
171 Wright State University	14,646	13,451	11,043	9,551	7,260	9,374	8,263	7,414
172 New York Medical College	14,633	13,244	12,958	13,817	11,794	9,327	7,837	5,779
173 Univ of Missouri Rolla	14,432	14,285	17,692	18,823	14,712	14,027	10,392	9,445
174 U of Arkansas Med Sci Cam	14,250	11,898	10,834	9,851	8,094	6,813	5,515	4,691
175 North Dakota State Univ	13,821	12,468	10,433	8,638	19,508	17,537	17,447i	17,358i
176 Hahnemann University	13,536i	13,595	11,158	8,551	9,062	10,694	12,810	8,970
177 University of Akron	13,405	10,372	9,728	7,114	7,190	5,360	3,596	3,245
178 Colorado School of Mines	12,971	10,943	9,364	8,832	8,515	7,807	6,349	5,540
179 Univ of South Alabama	12,924	11,105	10,503	8,578	7,668	7,574	7,477	6,022
180 Univ of Tex at Arlington	12,887	5,729	7,064	7,670	5,760	4,950	3,160	2,314
Total, 1st 180 insts.	16,734,715	15,518,599	14,277,250	12,815,229	11,567,321	10,408,356	9,236,009	8,217,002
181 Ohio University	12,798	12,982	11,461	10,863	8,548	8,091	5,811	4,745
182 Brigham Young University	12,682	11,608	11,544	10,967	11,341	10,086i	8,832	7,639
183 University of Lowell	12,403	11,291	11,242	10,903	8,364	8,453	5,940	3,980
184 San Jose State University	12,100	10,086	9,488	10,104	9,351i	8,598i	7,845i	7,092i
185 Medical Col of Georgia	12,082	12,052	11,363	9,925	10,053	9,323	8,008	6,923
186 Memphis State University	12,000	12,073	9,892	8,201	7,132	5,315	4,072	1,887
187 South Dakota State Univ	11,511	9,511	8,472	8,622	8,279	7,882	6,286	5,790
188 Oregon Grad Inst Sci/Tech	11,160	9,262	8,825	8,470	6,926	6,109i	5,294i	4,479
189 Eastern VA Medical School	11,112	10,496	8,125	6,614	4,320	3,441i	2,562i	1,683i
190 Univ of North Texas	10,580	9,741	9,121	7,038	5,724	4,789	3,865	5,251
Total, 1st 190 insts.	16,853,141	15,627,701	14,376,783	12,906,936	11,647,359	10,480,443	9,294,524	8,266,471
191 Univ of Texas at Dallas	10,571	12,075	11,265	10,936	10,677	7,947	7,352	6,972
192 NC Ag & Tech State Univ	10,427	8,657	6,706	6,401	4,461	5,754	4,938	4,689
193 Univ of Southwestern LA	10,232	8,319	6,817	5,092	5,017	4,695i	4,374	2,597i
194 Cleveland State Univ	10,205	6,699	7,570	7,334	6,897	4,528	3,788	2,547
195 Albany Medical College	10,131	9,431	9,827	11,694	13,287	12,869i	12,451i	12,033i
196 Northern Illinois Univ	10,074	8,930	7,304	5,905	4,899	5,042	4,785i	4,528i
197 Old Dominion U Res Fdn	10,040	10,478	9,107	7,252	6,572	5,934i	5,296i	4,658
198 Tenn Technological Univ	9,888	9,631	7,539	7,483	6,970	4,883i	2,796	1,425e
199 SUNY at Binghamton	9,870	10,680	9,270	8,926	8,541	8,322	7,101	6,112
200 Boston College	9,810	8,052	6,152	6,137	5,099	4,926i	4,754	4,941i
Total, 1st 200 insts.	16,954,389	15,722,653	14,458,340	12,984,096	11,719,779	10,545,343	9,352,159	8,316,973

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
201 Univ of Texas at El Paso	9,447	6,889	4,168	2,641	2,605	1,933	1,475	1,407
202 Med Col of Ohio at Toledo	9,353	7,159	6,809	5,495	7,652	7,267i	6,886i	6,505i
203 Polytechnic University	9,272	10,919	11,345	9,378	9,400	7,779	6,441	6,040
204 Georgia State University	9,271	8,942	7,000	5,843	5,258	2,900	1,973	2,177
205 Clarkson University	9,125	8,392	7,523	7,804	7,442	6,975	4,612	3,850
206 Clark Atlanta University	8,655	4,327i	0e	--	--	--	--	--
207 Southern Methodist Univ	8,607	13,600e	9,363	6,814	4,938	4,459i	3,981	3,491
208 George Mason University	8,469	8,011	4,220	3,834	2,368e	1,755i	1,143i	531
209 Kent State University	8,469	7,172	5,534	5,086	4,573	3,662	3,855	3,057
210 Creighton University	8,324	8,929	7,934	7,650	5,910i	4,171i	2,432	2,267
Total, 1st 210 insts.	17,043,381	15,806,993	14,522,236	13,038,641	11,769,925	10,586,244	9,384,957	8,346,298
211 Stevens Institute of Tech	8,303	6,146	4,973	6,426	8,915	7,660i	6,407i	5,154
212 Univ of Missouri Kan City	8,300	8,310	7,926	7,630	4,790	3,837	2,444	1,761
213 Mercer University	8,172	4,656	3,043	931	620	428	251	270i
214 CUNY Hunter College	8,075	6,928	6,526	6,437	6,943	5,858	3,859	3,172
215 Inst Paper Sci and Tech	7,887	5,761	6,231	5,782	5,777	5,208	4,721	4,627
216 University of Montana	7,671	7,332	6,482	6,842	6,332	5,478i	4,624e	4,340i
217 Univ of Sthrn Mississippi	7,388	4,666	4,413	3,517	3,840	2,440	1,758	1,445i
218 Catholic Univ of America	7,365	7,398	6,554	5,759	5,268	3,964	4,326	3,706
219 Meharry Medical College	7,249	6,663	6,564	5,228	4,797	4,137i	3,477i	2,817i
220 Illinois Inst of Tech	7,128	6,793	6,864	7,545	8,470	5,715	5,963	5,479
Total, 1st 220 insts.	17,121,119	15,871,646	14,581,812	13,094,738	11,825,677	10,630,969	9,422,787	8,379,069
221 Chas R Drew U of Med & Sc	7,043	4,970i	2,898	2,626	2,913	1,942i	971i	0
222 Northern Arizona Univ	6,913	5,902	5,368	4,204	3,774	2,308	2,117	1,824
223 U of MD Baltimore County	6,809	5,385	4,342	3,975	3,222	2,887	2,755	2,083
224 University of Toledo	6,743	5,551	4,599	3,843	2,950i	2,058	1,790	1,686
225 Alabama A & M University	6,599	7,010	6,272	6,140	4,534	3,986i	3,439i	2,892
226 University of Denver	6,484	10,102	8,938	10,038	12,239	13,957	14,801e	15,645e
227 Univ of P R-Med Sci Cmpus	6,310	6,293	6,528	5,517	6,893	6,397i	5,901i	5,405i
228 Florida Inst of Tech	6,305	7,003	3,531	2,505	1,918	1,886	2,091	1,764
229 Morehouse School of Med	6,291	5,891	4,320	2,222	0i	0i	0i	0i
230 Loma Linda University	6,191	7,547	5,248	6,496	7,469	5,959i	4,450	3,794i
Total, 1st 230 insts.	17,186,907	15,937,300	14,633,856	13,142,504	11,871,589	10,672,349	9,461,102	8,414,162
231 East Carolina University	6,119	6,098	5,241	4,679	3,771	3,858	3,095i	2,333
232 Western Michigan Univ	6,011	4,257	3,103i	1,949	1,267	1,600	822	450
233 Southern U & A&M College	5,942	4,856	3,967	3,451	2,196	2,845	3,191	3,068
234 Oakland University	5,912	4,102	4,673	3,132	4,500	4,016i	3,535i	3,054i
235 Worcester Poly Institute	5,889	4,683	4,208	3,814	3,562	3,708i	3,853i	3,998i
236 Union College (NY)	5,861	5,459	5,193	5,144	3,534i	1,926i	318	330
237 Virginia State University	5,795	3,258	2,620	2,476	2,358i	2,236i	2,116	2,293
238 Florida Atlantic Univ	5,600	4,985	3,469	3,045	2,665	2,059	1,105e	1,005
239 University of Tulsa	5,318	4,325	3,329	3,333	2,852i	2,371i	1,890	1,829
240 Wichita State University	5,182	3,196	3,443	4,758	2,741	2,018	1,890	1,558
Total, 1st 240 insts.	17,244,536	15,982,519	14,673,102	13,178,285	11,901,033	10,698,986	9,482,917	8,434,080
241 Univ. of Puerto Rico	5,058	5,374	4,017	4,741	4,175	3,904i	3,633i	3,362i
242 American University	5,057	4,127	3,765	3,917	3,286	2,720i	2,156i	1,592i
243 U Hlth Sci/Chcgo Med Sch	4,908	4,695	4,535	4,369	3,866	3,677	3,479	3,267i
244 Tuskegee University	4,426	5,089	5,348	3,752	2,752	1,787i	822	910i
245 U of the Virgin Islands	4,329i	4,883e	4,734	4,666	2,386e	1,760	1,312	1,231
246 Portland State University	4,169	3,834	3,374	2,810	2,737	2,298i	1,859	1,595
247 Jackson State University	3,912	3,762	3,747	3,403	2,260	2,076i	1,896i	1,716i
248 Alfred University	3,911	4,067	3,874	3,829	2,591	1,929	1,501	951
249 Marquette University	3,821	3,262	2,454	2,411	1,621	1,559	1,749	1,518
250 Bowling Green State Univ	3,729	3,400	3,353	3,142	2,439	2,018	1,763	1,582
Total, 1st 250 insts.	17,287,856	16,025,012	14,712,303	13,215,325	11,929,146	10,722,714	9,503,087	8,451,804

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
251 Tennessee State Univ	3,709	3,300	3,442	3,408	2,719	2,661	2,422e	2,182
252 Prairie View A & M Univ	3,623	3,521	3,680	1,741e	1,498	2,015i	2,531i	3,047i
253 Univ of Missouri Sys Off	3,561	2,991	9,500	8,734	9,512	8,735	6,730	6,027
254 Texas Col of Osteo Med	3,504	2,767	3,630	4,461	3,560	3,247	2,968i	2,689i
255 Hampton University	3,345	2,307	2,168	--	--	--	--	--
256 Cal Poly St U San Luis Ob	3,258	3,118	3,182	1,795	1,815i	1,437i	1,259i	1,081i
257 Wesleyan University	3,248	4,021	3,943	3,140	3,397	2,456	2,750	3,965i
258 Univ of N C at Charlotte	3,220	3,152	2,014	2,085	1,870i	1,656i	1,442i	1,228i
259 Miami University (Ohio)	3,087	2,203	2,364	2,194i	2,024i	1,854i	1,684i	1,514
260 Lincoln University	3,027	2,771	2,901	--	--	--	--	--
Total, 1st 260 insts.	17,321,438	16,055,163	14,749,127	13,242,883	11,955,341	10,746,775	9,524,873	8,473,537
261 New York Inst Technology	2,900e	3,087	3,998	5,678	6,093	4,838i	3,584	3,472
262 Illinois State University	2,898	2,951	2,559	2,578	2,296	1,758	1,652i	1,549i
263 Lamar University	2,898	2,121	779	202	417	330	199	198
264 University of D C	2,865	2,569	2,271i	1,973	1,485	2,371	2,172	1,362
265 Texas Christian Univ	2,859	1,823	888	737	912	1,124	1,047	955
266 S Dak Sch Mines & Tech	2,850	3,000	2,596	2,418	1,916	1,978	1,847	1,796i
267 Louisiana Tech University	2,759	3,894	3,930	2,828	2,775	2,610i	2,445i	2,280i
268 Texas A & I University	2,674	2,558	2,941	2,470	2,288i	2,109i	1,930i	1,751i
269 CUNY Grad Sch & Univ Ctr	2,554	3,858	3,069	2,189	2,336	2,569	1,363	967
270 South Carolina St College	2,526	2,593	1,894i	796	878i	955i	1,032i	1,109i
Total, 1st 270 insts.	17,349,221	16,083,617	14,773,852	13,264,752	11,976,737	10,767,417	9,542,144	8,488,976
271 CUNY Queens College	2,518	2,557	2,301	2,204	2,086i	1,971i	1,856i	1,741i
272 Bryn Mawr College	2,490	1,854	895	817	807	565	509	563
273 Univ of Missouri St Louis	2,468	2,291	2,439	2,218	1,824	1,950	1,527	1,433
274 Xavier University of LA	2,424	1,902	1,294	--	--	--	--	--
275 Univ of Ark Pine Bluff	2,419	1,188	1,146	1,199	1,047	1,010	1,002	885
276 Fort Valley State Univ.	2,370	2,313	2,173	--	--	--	--	--
277 Eastern Washington Univ	2,289	1,811	1,615	1,333	1,384	1,098	929	1,199i
278 Univ of Wis-Stout	2,282	755	635	464	379i	297i	215i	133i
279 Air Force Inst of Tech/Nr	2,243	2,200	1,800i	1,400	456	370i	285	146
280 Institute of Textile Tech	2,148	1,921	1,311	1,676	1,238	1,172i	1,109i	1,046i
Total, 1st 280 insts.	17,372,872	16,102,403	14,789,463	13,276,065	11,985,958	10,775,850	9,549,576	8,496,122
281 Texas Southern Univ	2,101	1,546	1,519	1,703	1,491i	1,279i	1,067	322
282 Alcorn State University	2,041	1,935	1,850	1,692e	1,623i	1,554i	1,485	1,359i
283 Idaho State University	2,030	1,634	1,312	711	709	661	401	394
284 Kentucky State University	2,026	2,856	1,721	1,697	1,856	1,656i	1,456i	1,256
285 Univ of N C at Greensboro	1,989	1,154	823	455	495	386	604	509
286 CUNY Bernard Baruch Col	1,897	1,150	646	194	234i	266i	298i	330i
287 Fordham University	1,816	2,501	2,648	2,386	2,190	1,850i	1,511i	1,172
288 Amherst College	1,751	1,792	1,557	1,549	1,400i	1,254i	1,108i	962i
289 East Tennessee State Univ	1,740	1,902	1,629	1,163	1,258	1,136i	1,015	691
290 Univ of Wis-Superior	1,707	1,704	1,745	1,553	1,659	1,412	1,518	1,225
Total, 1st 290 insts.	17,391,970	16,120,577	14,804,913	13,289,168	11,998,873	10,787,304	9,560,039	8,504,342
291 Nova University	1,667	1,601	1,108	962	873	730i	587	702
292 Central State University	1,640	3,676	673	--	--	--	--	--
293 U of MD Eastern Shore	1,620	1,850	2,944	1,736	1,522	1,615	1,534i	1,455i
294 Univ of South Dakota	1,598	1,831	1,381	1,287	1,200i	1,113i	1,026i	939
295 Calif St Poly Univ Pomona	1,584	1,320	1,314	1,626	1,340i	1,058i	776i	494i
296 Santa Clara University	1,579	1,569	1,396	1,355	1,094	962	1,114	1,149
297 Occidental College	1,570	1,627	2,011	1,535	1,482i	1,431i	1,380i	1,329i
298 Villanova University	1,461	1,390	1,440	696	755	547i	339	304
299 Wentworth Inst of Tech	1,460	1,435	1,383	1,457	1,431i	1,405i	1,379i	1,353i
300 University of Detroit	1,450	1,526	1,282	805	798i	795i	792i	789i
Total, 1st 300 insts.	17,407,599	16,138,702	14,819,845	13,300,627	12,009,368	10,796,960	9,568,966	8,512,856

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
301 NE Ohio Univ Med School	1,408	1,409	1,616	1,956	1,349	1,020	1,062	976
302 Smith College	1,392i	1,398	1,774	1,264	1,265i	1,265i	1,265i	1,265i
303 Chicago Col of Osteo Med	1,372	1,161	1,651	2,252	1,772	1,268	1,188	916
304 Ponce School of Medicine	1,372	943	856	663	657	715	11	10
305 Texas Woman's University	1,359	1,336	969	625	709	740	1,112	992
306 Univ of Nebraska at Omaha	1,354	1,002	410	235	186	151	109	113
307 Pomona College	1,339	1,179	1,264	536	600i	662i	724i	786i
308 Delaware State College	1,330	1,027	1,027	--	--	--	--	--
309 Clark University	1,314	1,281	1,256	1,111	1,058	1,335i	1,611i	1,887i
310 Langston University	1,310	1,200	2,349	--	--	--	--	--
Total, 1st 310 insts.	17,421,149	16,150,638	14,833,017	13,309,469	12,016,964	10,804,116	9,576,048	8,519,801
311 Tougaloo College	1,262	1,028	1,191	--	--	--	--	--
312 Univ of West Florida	1,254	1,358	1,619	1,313	2,099i	2,882i	3,665i	4,448i
313 Ball State University	1,241	850	798	696	664	725	725	598
314 SUNY College Buffalo	1,240	832	863i	893i	923i	953i	983i	1,013i
315 Sam Houston State Univ	1,238	380	219	206	320	390	264	311
316 SUNY College Plattsburgh	1,217	1,254	1,030	1,164	922	1,075	341	183
317 Indiana State University	1,179	903	967	949	541	782	690i	598i
318 Stephen F Austin St Univ	1,178	1,390	1,417	791	863	896i	928i	960
319 Albany State College	1,172	1,173	1,725	366	263	207i	152i	97
320 New Sch For Soc Research	1,164	1,026	1,000	1,282	585	425i	266i	107
Total, 1st 320 insts.	17,433,294	16,160,832	14,843,846	13,317,129	12,024,144	10,812,451	9,584,062	8,528,116
321 CUNY Col Staten Island	1,140	1,351	1,171	867	788i	712i	636i	560i
322 Northeast Missouri St U	1,118	1,522	1,605	772	402	272i	142	145i
323 University of the Pacific	1,103	897	990	968i	951i	934i	917i	900i
324 Baylor University	1,067	1,143	1,841	934	931	870i	810i	750i
325 Central Michigan Univ	1,066	1,071	866	1,025	1,164	669	268	326
326 Tarleton State University	998	309	38	44	44	53i	61i	69
327 Phila Col of Pharm & Sci	968	1,153	778	405	342	425	302	314
328 SUNY College Brockport	948	833	357	219	205i	195i	185i	175i
329 Morehouse College	926	868	1,093	--	--	--	--	--
330 Marshall University	918	1,270	1,679	1,526	938	837	856	798
Total, 1st 330 insts.	17,443,546	16,171,249	14,854,264	13,323,889	12,029,909	10,817,418	9,588,239	8,532,153
331 Northeast Louisiana Univ	904	1,138	439	386	308	315	235	184
332 Morris Brown College	887	647e	164	--	--	--	--	--
333 Univ of Wis-La Crosse	862	795	531	309	347	338	534	440
334 Fairleigh Dickinson Univ	859	3,183	3,356	4,196	3,210	2,276	1,680	1,834
335 U Ctrl Del Caribe Esc Med	852	620	682	540	577	818	175	0
336 CUNY York College	850	816	826	723	659	779i	899	560
337 Baylor Col of Dentistry	824	849	788	692	598	629	414	1,150
338 De Paul University	786	972	905	576	617	376i	135e	132
339 Barnard College	758	653	717	677	670i	667i	664i	661i
340 Norfolk State University	752	826	652	425	304	456	588	584i
Total, 1st 340 insts.	17,451,880	16,181,748	14,863,324	13,332,413	12,037,199	10,824,073	9,593,563	8,537,698
341 Arkansas State University	742	755	715	432	422i	416i	410i	404i
342 Morgan State University	701	657	649	742e	635	886	775i	665i
343 Coppin State College	695	1,017	834	--	--	--	--	--
344 Cal Sch Prof Psych-Fresno	661	1,382	1,922	1,015	535	267i	0	0
345 Selma University	650	790	816	--	--	--	--	--
346 Fisk University	641	1,156	1,157	1,741	862	732i	604i	476i
347 Adelphi University	630i	633i	592	466i	341	317i	296i	275i
348 Kirksville Col Osteo Med	624	539	727	791i	855	769i	689i	609i
349 Winston-Salem State Univ	617	532	650	--	--	--	--	--
350 Grand Valley State Univ	611	570	465	576	484i	392i	300i	208i
Total, 1st 350 insts.	17,458,452	16,189,779	14,871,851	13,338,176	12,041,333	10,827,852	9,596,637	8,540,335

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
351 Bethune Cookman College	599	554	440	--	--	--	--	--
352 St John's University (NY)	593	759	632	814	769i	726i	683	366
353 Duquesne University	572	558	357	357	357	380i	400i	420i
354 Claremont Univ Ctr & Grad	571	583	746	1,353	1,367	1,280i	1,193i	1,106i
355 Univ of Wis-Parkside	561	798	883	704	659i	614i	569i	524i
356 West Texas State Univ	560	533	597	470	677	524	617	504
357 Univ of Northern Iowa	559	357	156	95	78i	62i	46i	30i
358 Knox College	554	410	382	292	250i	212i	174i	136i
359 Lincoln University (PA)	510	845	768e	867	648i	432i	216i	0
360 Univ of Wis-Stevens Point	498	449	432	362	380i	394i	408i	422i
Total, 1st 360 insts.	17,464,029	16,195,625	14,877,244	13,343,490	12,046,518	10,832,476	9,600,943	8,543,843
361 Abilene Christian Univ	493	312	353	334	295i	260i	225i	190i
362 Hofstra University	493	515	366	165	258	278	219	160
363 Cal Sch Prof Psych-L A	490	1,316	1,551	616	500	500	0	0
364 Southern Univ-New Orleans	490i	553i	500	--	--	--	--	--
365 Milwaukee School of Eng	486	508	565	640	614i	594i	574i	554i
366 Johnson C. Smith Univ	475	477	480	--	--	--	--	--
367 Colorado College	454	151	74	53	72i	85i	98i	111i
368 Grambling State Univ	450i	409	106	64	136	137i	137i	137i
369 Alabama State University	448	423	456	--	--	--	--	--
370 Spelman College	444	505	399	--	--	--	--	--
Total, 1st 370 insts.	17,468,762	16,200,794	14,882,094	13,345,362	12,048,393	10,834,330	9,602,196	8,544,995
371 Columbia U Teachers Col	429	803	581	900	765	644i	525i	406i
372 Claflin College	383	205	0e	--	--	--	--	--
373 Augsburg College	382	139	115	90	82i	75i	68i	61i
374 Drake University	354	182	167	163	144i	126i	108i	90i
375 SUNY College Oswego	350	160	467	341	334	422i	510	282
376 Univ of Wis-Oshkosh	344	312	217	166	145i	127i	109i	91i
377 Phila Col Osteopathic Med	339i	340	512	381	344	233	116i	0
378 Canisius College	337	619	209	309	289i	270i	251i	232i
379 Univ of Wis-Green Bay	329	449	616	376	402i	425i	448i	471i
380 Univ of Wis-Eau Claire	292	430	544	369	324i	281i	238i	195i
Total, 1st 380 insts.	17,472,301	16,204,433	14,885,522	13,348,457	12,051,222	10,836,933	9,604,569	8,546,823
381 Rust College	289	156	214	--	--	--	--	--
382 Fayetteville State Univ	275	154	360	--	--	--	--	--
383 East Texas State Univ	260	279	401	269	429	408	276	181
384 SUNY College New Paltz	257	387	107	36	220	198i	178i	158i
385 Andrews University	255	394	200	190e	160i	130i	100i	70i
386 Bowie State University	234	35	0	--	--	--	--	--
387 SUNY St Coll of Optometry	231	483	494	375	518	448i	381i	314i
388 North Carolina Cntrl Univ	219i	199	555e	571	515i	464i	413i	362i
389 West Virginia State Col	218	146	81	--	--	--	--	--
390 Catholic U of PR	217	286	515	443	522	514i	507i	500
Total, 1st 390 insts.	17,474,756	16,206,952	14,888,449	13,350,341	12,053,586	10,839,095	9,606,424	8,548,408
391 Mass Col Phar/Allied Hlth	215	73	41	90i	137i	184i	231i	278i
392 SUNY College Geneseo	214	316	188	218	179i	142i	105i	68i
393 Savannah State College	212	221	179	--	--	--	--	--
394 East Stroudsburg U of PA	202	440	447	486	414i	347i	280i	213i
395 Univ of Wis-River Falls	192	122	142	85	73i	65i	57i	49i
396 Oakwood College	179	226	0	--	--	--	--	--
397 Monmouth College (NJ)	175	96	100	0	0i	0i	0i	0i
398 Long Island University	170	171	313	572	324	116	132	156
399 University of Portland	169	370	462	598	481i	365i	249i	133i
400 W VA Schl Osteopathic Med	168	134	120	85	90	78i	66	200e
Total, 1st 400 insts.	17,476,652	16,209,121	14,890,441	13,352,475	12,055,284	10,840,392	9,607,544	8,549,505

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
401 St Olaf College	167	172	136	210	216i	222i	228i	234i
402 Univ Osteo Med & Hlth Sci	163	67	97	108	20	12i	6i	0
403 Sul Ross State University	156	301	215	155	141i	129i	117i	105i
404 Philander Smith College	154	120	165	--	--	--	--	--
405 Seton Hall University	153i	186i	220i	254i	287i	321i	355i	388i
406 Fuller Theological Sem	150	50	60	50	20	12	7	7e
407 Univ of Wis-Whitewater	141	78	134	70	60i	53i	46i	39i
408 SUNY College Potsdam	140	91	145	113	144i	170i	196i	222i
409 Univ of Northern Colorado	132	223	182	33	50	61	48	0
410 Montclair State College	131	76	25	36	45i	47i	49i	51i
Total, 1st 410 insts.	17,478,139	16,210,485	14,891,820	13,353,504	12,056,267	10,841,419	9,608,596	8,550,551
411 Pacific Lutheran Univ	130	577	44	70	75i	77i	79i	81i
412 SUNY College Oneonta	121	104	77	67	77i	86i	95i	104i
413 Northwestern St Univ La	119	112	77	7	9i	11i	13i	15i
414 Southern Univ-Shreveport	116i	131	148	--	--	--	--	--
415 Southern Oregon St Col	109	57	89	0	0	0	2	22
416 Providence College	103	25	18	47	37	24i	12	23
417 Trenholm State Tech Col	100	30	22	--	--	--	--	--
418 SUNY College Cortland	96	254	168	151	127i	104i	81i	58i
419 Chapman University	95i	86	81e	81	70i	60i	50i	40i
420 Seattle University	94	148	241	167	0	10i	20e	28
Total, 1st 420 insts.	17,479,222	16,212,009	14,892,785	13,354,094	12,056,662	10,841,791	9,608,948	8,550,922
421 Goucher College	73	87	78	62	72i	82i	92i	102i
422 Cal Sch Prof Psych-S D	68	65i	62	59	0	0i	0	0
423 Xavier University	66i	60	116	149	234i	318i	402i	486i
424 Bennett College	64	425	364	--	--	--	--	--
425 Miss Valley State Univ	64	43	14	31	0	0i	0i	0
426 Jarvis Christian College	60	75	60	--	--	--	--	--
427 Knoxville College	59i	66i	60	--	--	--	--	--
428 Kutztown Univ of Penn	55	119	195	360	330i	306i	282i	258i
429 SUNY College Fredonia	54	130i	206i	282	277i	272i	267i	262i
430 Univ of Wis-Platteville	38	23	47	10	13i	13i	13i	13i
Total, 1st 430 insts.	17,479,823	16,213,102	14,893,987	13,355,047	12,057,588	10,842,782	9,610,004	8,552,043
431 Oral Roberts University	37	60	1,206	2,637	2,519i	2,401i	2,283	0
432 Northeastern Ill Univ	33	118	77	37	52i	63i	74i	85i
433 Bemidji State University	32	74	60	48	40i	36i	32i	28i
434 Col Osteo Med of Pacific	6	9	11	0	0	0	0	0
435 Antioch University	0	0	0	0	1i	2i	3i	4i
436 Benedict College	0	0	0	--	--	--	--	--
437 Biola University	0	0	13	0	0	0	0	0
438 Cal Sch Prof Psych-Berkly	0	0	0	0	0	0	0	0
439 Calif St Univ Stanislaus	0	0	0	0	431i	862i	1,293i	1,724i
440 Cheyney University of PA	0	0	0e	--	--	--	--	--
Total, 1st 440 insts.	17,479,931	16,213,363	14,895,354	13,357,769	12,060,631	10,846,146	9,613,689	8,553,884
441 Dillard University	0	0	469	0	0	0i	0i	0
442 Elizabeth City State Univ	0	15	26	--	--	--	--	--
443 Fielding Institute	0	0	0	0	0	0	0	0
444 Mayo Grad School of Med	0	0	0	0	0	0i	0i	0
445 Paul Quinn College	0	0	0	--	--	--	--	--
446 Rand Grad Inst Pol Stdies	0	0	0	0	0	0i	0	0i
447 Shaw University	0	0	0	--	--	--	--	--
448 Slippery Rock Univ of PA	0	0	0	45	36i	27i	18i	9i
449 St Bonaventure University	0	0	0	3i	6e	4i	2i	0
450 St Louis Community Col	0	0	0	0	0i	0i	0i	0i
Total, 1st 450 insts.	17,479,931	16,213,378	14,895,849	13,357,817	12,060,673	10,846,177	9,613,709	8,553,893

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-32. Total R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Total							
	1991	1990	1989	1988	1987	1986	1985	1984
451 Stillman College	0	0	0	--	--	--	--	--
452 Talladega College	0	0	366	--	--	--	--	--
453 The Wright Institute	0	0	0	0	0	0	295 i	587 i
454 U of California System	0	0	0	26,439	19,307	13,926	11,866	10,161
455 US International Univ	0	93	224	0	0	0	0 i	0
456 Union Institute	0	0	0	0	0	0 i	0 i	0
457 Univ of Health Sciences	0	0	0	58	83	54 i	27 i	0
458 Voorhees College	0	0	0	--	--	--	--	--
459 Wiley College	0	0	0	--	--	--	--	--
Total, 1st 459 insts.	17,479,931	16,213,471	14,896,439	13,384,314	12,080,063	10,860,157	9,625,897	8,564,641
Total, all other sampled insts.	0	1,935	1,133	81,480	73,713	67,498	60,133	55,121
Estimated total non-sampled insts.	140,278	128,872	118,545	0	0	0	0	0

1/ Includes Applied Physics Laboratory with $439 million in total R&D expenditures.

2/ Does not include R&D expenditures at university associated federally funded research and development centers. See tables B-73 and B-74.

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
Total, all institutions	10,220,505	9,635,724	8,991,478	8,191,150	7,341,228	6,710,075	6,063,028	5,429,646
1 Johns Hopkins Univ 1/	641,239	599,851	590,184	509,009	476,290	412,714	367,053	331,859
2 Stanford University	242,340	255,821	238,650	232,572	204,386	192,076	172,423	149,520
3 Mass Inst of Technology	237,667	233,813	215,140	210,419	206,785	201,097	189,935	174,938
4 University of Washington	221,124	203,353	182,453	160,261	145,184	141,973	135,830	119,785
5 University of Michigan	206,276	180,456	174,875	160,854	137,558	118,069	106,147	99,341
6 Univ of Cal San Diego	200,451	182,555	171,479	159,778	142,751	128,250	115,632	115,349
7 Univ of Cal San Francisco	190,936	175,257	159,906	137,747	117,302	105,694	95,615	82,822
8 Univ of Wis-Madison	183,652	178,862	169,452	162,384	149,665	138,784	123,989	110,704
9 Cornell University	173,478	171,249	157,984	153,662	144,604	134,660	119,319	100,767
10 Univ of Cal Los Angeles	167,885	164,442	159,002	146,946	130,763	121,668	109,689	96,524
Total, 1st 10 insts.	2,465,048	2,345,659	2,219,125	2,033,632	1,855,288	1,694,985	1,535,632	1,381,609
11 University of Minnesota	164,887	143,810	132,880	119,789	109,003	100,308	87,776	79,489
12 Columbia Univ Main Div	163,561	156,270	146,712	139,558	133,018	128,436	120,120	107,874
13 Harvard University	156,014	154,090	143,451	133,003	119,955	111,503	103,556	93,430
14 Yale University	149,506	144,962	138,835	132,952	116,943	107,600	98,700	85,909
15 Pennsylvania State Univ	146,212	136,656	114,646	106,020	93,200	82,412	70,099	60,444
16 Univ of Pennsylvania	144,451	133,747	123,810	115,080	111,185	105,925	92,893	89,831
17 Univ of Cal Berkeley	140,261	131,717	124,371	116,565	108,828	102,578	96,779	87,653
18 Univ of Southern Cal	132,230	123,714	119,005	112,615	101,749	92,906	76,425	64,239
19 Univ. of Colorado	119,068	116,394	109,145	96,041	83,144	74,887	69,359	59,080
20 University of Ill Urbana	118,748	117,168	114,398	109,633	104,420	83,996	80,536	71,182
Total, 1st 20 insts.	3,899,986	3,704,187	3,486,378	3,214,888	2,936,733	2,685,536	2,431,875	2,180,740
21 Duke University	114,879	106,053	99,036	86,240	67,925	62,879	56,437	50,793
22 Univ of Texas at Austin	113,192	109,593	94,311	89,982	88,395	75,152	65,029	56,482
23 Washington University	112,475	105,759	96,829	88,843	77,757	68,399	61,050	57,537
24 University of Rochester	106,874	105,644	101,049	92,533	80,322	75,939	64,064	55,015
25 Univ of NC at Chapel Hill	103,485	92,468	93,280	82,723	72,529	64,625	55,746	44,430
26 University of Arizona	101,818	92,920	80,533	73,309	65,024	61,973	51,694	47,411
27 Georgia Institute of Tech	101,476	94,842	98,048	78,798	63,132	58,432	50,349	51,241
28 California Inst of Tech	100,820	90,577	84,167	78,750	71,086	63,708	56,805	43,390
29 University of Pittsburgh	99,932	90,700	81,217	72,462	62,060	55,805	48,714	40,668
30 Texas A & M University	97,727	93,001	93,584	90,163	75,432	75,946	71,346	53,201
Total, 1st 30 insts.	4,952,664	4,685,744	4,408,432	4,048,691	3,660,395	3,348,394	3,013,109	2,680,908
31 University of Chicago	93,993	95,327	90,459	80,967	75,889	73,304	66,950	64,010
32 Ohio State University	88,542	70,878	75,484	69,135	58,555	56,418	53,240	46,060
33 New York University	81,896	80,756	81,143	77,746	76,126	69,099	60,567	54,298
34 University of Iowa	81,007	79,046	74,271	64,370	57,159	52,497	48,059	41,468
35 Univ of Cal Davis	79,961	77,424	72,718	63,435	56,622	48,549	47,652	45,436
36 Baylor Col of Medicine	78,752	75,793	69,336	60,825	49,834	46,729	41,749	37,378
37 Univ of MD College Park	77,866	66,410	58,924	55,365	55,194	43,769	39,365	32,829
38 Case Western Reserve Univ	76,390	70,515	68,632	59,078	53,580	47,032	42,182	39,337
39 Univ Alabama Birmingham	76,317	74,486	68,204	62,369	54,534	45,337	39,030	32,383
40 Vanderbilt University	71,021	66,747	56,151	44,646	31,343	27,269	24,709	21,649
Total, 1st 40 insts.	5,758,409	5,452,126	5,123,754	4,686,627	4,229,231	3,858,397	3,476,612	3,095,756
41 University of Miami	69,847	68,144	63,101	48,971	38,052	36,531	32,817	30,644
42 SUNY at Buffalo	68,945	66,876	64,453	60,097	51,212	47,308	42,860	39,417
43 University of Utah	68,769	62,297	61,819	57,383	54,226	51,428	45,564	41,606
44 Yeshiva University	67,831	65,066	58,224	58,823	59,768	56,922	55,794	51,494
45 Purdue University	67,810	64,464	63,979	64,163	56,302	56,475	48,542	43,524
46 Univ of Massachusetts	67,665	56,018	56,505	52,139	44,256	39,452	33,544	28,945
47 Woods Hole Ocngrphic Inst	67,154e	62,356	64,333	49,400	42,239	38,666	38,560	37,765
48 University of Florida	66,777	64,614	60,731	54,785	49,311	46,751	42,031	39,946
49 Carnegie-Mellon Univ	65,290	64,550	65,079	63,009	53,817	41,706	37,666	33,419
50 Univ. Of Tennessee System	63,575	58,644	57,736	53,897	45,808	42,615	38,245	33,649
Total, 1st 50 insts.	6,432,072	6,085,155	5,739,714	5,249,294	4,724,222	4,316,251	3,892,235	3,476,165

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
51 Northwestern University	62,718	62,183	57,510	54,245	49,286	46,755	42,317	40,709
52 Indiana University	61,831	57,155	58,334	52,498	44,211	40,024	37,527	32,565
53 Utah State University	61,762	58,985	42,449	34,763	22,109	22,814	21,716	19,983
54 Michigan State University	61,646	58,221	51,741	49,771	44,989	47,725	46,605	44,133
55 University of Virginia	61,060	58,801	51,214	47,482	41,267	38,541	35,152	31,947
56 Emory University	60,586	52,367	46,497	43,668	36,698	32,819	26,136	22,896
57 Boston University	60,166	60,459	56,402	51,918	49,406	45,457	38,257	34,276
58 SUNY at Stony Brook	58,977	55,911	49,726	54,017	40,302	35,249	31,946	28,046
59 UT SW Medical Ctr-Dallas	57,746	54,965	51,254	48,357	45,382	38,504	34,087	29,175
60 New Mexico State Univ	57,522	54,688	45,660	43,481	37,904	33,394	29,235	29,159
Total, 1st 60 insts.	7,036,086	6,658,870	6,250,501	5,729,494	5,135,776	4,697,533	4,235,213	3,789,054
61 Louisiana State Univ Sys	57,033	48,802	40,114	35,578	31,089	27,808	26,086	20,818
62 Colorado State University	55,689	50,744	46,572	44,600	38,961	36,592	28,702	26,479
63 Univ of Cal Irvine	52,652	52,492	46,492	42,894	38,138	38,328	34,772	29,929
64 Princeton University	52,335	51,559	47,176	47,245	43,505	36,199	30,892	27,747
65 Oregon State University	51,099	50,544	49,112	48,877	46,774	41,307	41,117	40,482
66 Rutgers the St Univ of NJ	48,822	40,977	35,896	29,204	27,178	24,059	23,947	19,984
67 VA Polytech Inst & St U	47,866	45,949	38,597	33,771	32,129	30,259	25,650	23,090
68 University of Cincinnati	47,445	44,966	40,598	35,986	32,044	27,758	24,924	22,350
69 N C State Univ at Raleigh	46,894	43,787	37,783	34,256	33,662	30,851	28,229	25,668
70 Univ of Cal Santa Barbara	46,647	47,873	39,227	36,205	32,856	27,320	23,131	21,552
Total, 1st 70 insts.	7,542,568	7,136,563	6,672,068	6,118,110	5,492,112	5,018,014	4,522,663	4,047,153
71 University of Connecticut	46,156	43,477	46,184	38,953	36,884	36,142	38,944	44,592
72 University of Georgia	45,019	43,864	42,797	39,703	35,261	32,184	28,403	26,581
73 Virginia Commonwlth Univ	44,974	41,606	35,151	31,150	31,095	27,242	26,816	20,658
74 Univ of Hawaii-Manoa	44,857	42,665	40,574	38,560	34,472	35,322	34,886	32,701
75 Univ of MD Balt Prof Sch	43,682	38,841	35,970	33,102	26,244	21,735	19,738i	17,741i
76 Univ of Ill Chicago	43,096	43,968	43,288	40,260	34,570	30,109	26,357	24,829
77 Iowa St U of Sci & Tech	42,793	34,043	28,895	23,306	19,682	17,376	16,030	20,755
78 CUNY Mt Sinai Sch of Med	42,035	43,607	37,233	32,852	31,024	26,166	23,997	21,411
79 Georgetown University	41,597	36,093	37,351	30,666	24,477	19,894	16,887	14,626
80 Tufts University	39,113	38,290	40,771	41,953	37,148	32,696i	28,249i	23,802i
Total, 1st 80 insts.	7,975,890	7,543,017	7,060,282	6,468,615	5,802,969	5,296,880	4,782,970	4,294,849
81 Univ of Med & Dent of N J	38,768	33,185	27,983	21,849	16,989	15,840	14,753	12,561
82 Rockefeller University	36,759	36,788	41,192	37,452	37,983	35,738	30,047	26,713
83 Tulane University	36,713	28,331	24,095	23,727	21,836	18,420	14,471	12,294
84 Brown University	35,571	36,919	34,506	35,150	32,024	25,333	22,645	21,294
85 Univ of Alaska Fairbanks	34,335	31,896	26,659	23,441e	21,523i	19,607i	17,691i	15,775i
86 Dartmouth College	34,317	30,135	27,222	25,729	21,864	18,816i	15,769i	12,722
87 Wake Forest University	33,385	30,182	28,511	23,026	18,772	16,497i	14,224i	11,951i
88 U Tex Hlth Sci Ctr Houstn	32,778	29,017	29,500	27,658	24,727	22,604	19,023	14,732
89 U Tex Hlth Sci Ctr S Anto	32,770	29,431	29,324	27,528	22,469	22,779	19,697	16,550
90 UT MD Anderson Cancer Ctr	32,314	28,889	28,992	27,129	22,162	21,304	19,408	16,379
Total, 1st 90 insts.	8,323,600	7,857,790	7,358,266	6,741,304	6,043,318	5,513,818	4,970,698	4,455,820
91 Washington State Univ	32,257	26,884	22,697	21,361	21,274	20,115	20,567	12,908
92 University of Kentucky	31,636	29,612	27,010	27,724	26,261	21,736	16,497	15,922
93 University of Dayton	31,132	29,044	26,650	26,101	25,370	23,631	21,272	20,216
94 U of VT & State Agr Coll	30,860	30,555	28,535	25,539	22,289	19,848	18,957	14,932
95 Wayne State University	30,583	28,488	28,167	22,716	16,927	15,789	15,682	14,965
96 University of New Mexico	30,141	25,449	23,934	24,862e	29,096	35,810	33,040	23,342
97 Oregon Hlth Sciences Univ	28,897	27,241	24,162	18,240	15,379	13,241	10,928	10,443
98 Temple University	28,873	26,164	25,232	20,137	18,352	18,573	18,398	18,680
99 Florida State University	28,495	32,927	25,498	24,027	21,416	21,850	16,910	12,054
100 Univ of Nebraska-Lincoln	27,499	22,686	25,803	25,448	24,512	20,823	17,156	14,195
Total, 1st 100 insts.	8,623,973	8,136,840	7,615,954	6,977,459	6,264,194	5,725,234	5,160,105	4,613,477

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
101 Univ of Missouri Columbia	27,463	24,422	22,312	20,170	20,250	20,068	18,577	17,325
102 University of Kansas	26,419	26,786	26,420	24,880	22,941	21,837	19,731i	17,628i
103 Arizona State University	26,246	26,590	22,151	19,006	14,009	13,541	12,556	9,031
104 University of Oklahoma	25,786	16,871	17,020	16,326	14,453	14,263	17,229	16,003
105 Mississippi State Univ	25,751	21,426	17,694	13,556	12,387	12,781	11,151	10,310
106 Medical College of Wis	25,062	21,594	21,432	19,803	15,551	13,600	12,272	11,148i
107 Univ of Rhode Island	23,980	20,511	21,940	22,967	19,289	19,933i	20,577	21,081
108 George Washington Univ	23,715	26,817	25,220	19,888	20,142	17,579i	15,016	17,209
109 Univ of South Florida	23,578	30,481	26,576	8,841	7,890	7,344	5,545	4,901
110 Rensselaer Polytech Inst	23,372	22,809	19,143	18,320	14,207	12,996	11,673	11,804
Total, 1st 110 insts.	8,875,345	8,375,147	7,835,862	7,161,216	6,425,313	5,879,176	5,304,432	4,749,917
111 Thomas Jefferson Univ	23,100	22,451	21,311	16,766	14,070	7,307	7,229	6,912
112 Univ of South Carolina	23,084	20,587	17,596	15,655	14,537	14,116	10,805	9,334
113 Rice University	22,838	19,997	16,340	14,300	13,155i	12,012i	10,869	9,766i
114 Brandeis University	21,280	18,819	19,080	18,595	16,857i	15,119i	13,381	13,112
115 U Tex Med Brnch Galveston	20,974	21,693	23,152	19,717	16,738	15,307i	13,876	11,595
116 Univ Alabama Huntsville	20,363	21,355	18,001	11,998	7,548	4,442	3,397	2,752
117 U of Houston	20,140	17,575	16,358	14,152	11,040	9,680	9,245	8,072
118 University of Delaware	20,053	17,588	17,083	13,708	13,662	12,578	10,626	10,811
119 West Virginia University	19,582	21,639	15,662	14,430	12,099	12,708	11,516	10,225
120 University of Oregon	19,311	20,151	17,286	14,573	12,783	12,918	11,423	10,532
Total, 1st 120 insts.	9,086,070	8,577,002	8,017,731	7,315,110	6,557,802	5,995,363	5,406,799	4,843,028
121 US Naval Postgrad School	19,264	17,333	15,170	15,487	12,934	13,006	12,083	10,891i
122 Univ of New Hampshire	18,516	14,455	14,594	13,348	12,769	11,113	10,676	9,102
123 SUNY Hlth Sci Ctr - Brkln	17,949	14,574	11,552	10,754	10,494	9,946i	9,399i	8,852
124 Univ of Nevada, Las Vegas	17,568	13,270i	8,972i	4,674	3,991i	3,309i	2,627i	1,945i
125 University of Mississippi	16,937	14,973	10,841	9,317	8,247	7,786	6,877	6,708
126 San Diego State Univ	16,744	14,647	13,048	12,688	11,386	6,031	5,225	4,735
127 Clemson University	16,594	14,221	12,484	13,148	9,016	7,550	9,965	6,668
128 St Louis University	16,358	14,106	12,272	8,332	7,783i	7,236i	6,689i	6,142i
129 Univ of Cal Riverside	16,031	15,806	15,584	16,672	15,001	14,626	13,864	13,127
130 Univ of Cal Santa Cruz	15,805	13,855	12,543	12,263	11,432	10,652	10,074	8,571
Total, 1st 130 insts.	9,257,836	8,724,242	8,144,791	7,431,793	6,660,855	6,086,618	5,494,278	4,919,769
131 Oklahoma State University	15,756	17,744	14,116	12,650	9,575	8,502	11,833	9,170
132 Kans St U - Ag & App Sci	15,726	15,651	15,951	14,294	13,270	12,969	10,421	10,766
133 Florida A & M University	15,592	13,110	10,509	8,674	8,100	7,683i	7,266	8,341
134 Auburn University	15,279	14,629	15,179	18,243	13,446	11,893	10,237	8,448
135 University of Idaho	15,149	13,812	12,207	10,970	8,720	8,987	13,656	12,660
136 The Medical Col of Penna	14,960	11,704	11,514	9,020	7,449	6,289i	5,129i	3,969
137 Loyola Univ - Chicago	14,703	6,203	6,051	4,447	3,804	3,303	2,876	2,932
138 Univ of P R-Mayaguez	14,613i	14,337	14,114	12,879	8,732	8,183i	7,634i	7,085i
139 University of N Dakota	14,470	14,398	14,104	12,075	12,515	10,759i	9,006i	7,253i
140 Med Univ of S. Carolina	14,367	10,910	11,547	10,956	10,797	10,297	9,087	8,038
Total, 1st 140 insts.	9,408,451	8,856,740	8,270,083	7,546,201	6,757,263	6,175,483	5,581,423	4,998,431
141 Syracuse University	14,192	18,924	20,367	22,377	17,987	15,799	12,812	8,716
142 University of Notre Dame	13,587	12,867	13,209	13,579	10,399	9,984	10,429	9,909
143 Unif Serv Univ of Hlth Sc	12,846	11,288	12,706	12,613	12,076	12,860	10,453	8,890
144 University of Wyoming	12,782	12,207	13,804	11,136	8,701	9,321	7,452	7,700
145 Univ of Ark Fayetteville	12,371	10,831	8,955	8,193	7,696	8,612	8,134	6,713
146 SUNY at Albany	12,204	14,497	15,171	13,595	13,019	11,662	9,228	7,587
147 Lehigh University	11,870	11,242	9,925	10,297	9,679	7,082	6,383	6,846
148 CUNY City College	11,220	10,554	9,005	8,071	7,552	6,942i	6,332	6,097
149 New York Medical College	11,056	9,028	10,021	11,097	10,038	8,086	6,739	4,604
150 Univ of Nevada - Reno	10,858	11,922	8,647	9,989	8,033	7,454i	6,877i	6,300e
Total, 1st 150 insts.	9,531,437	8,980,100	8,391,893	7,667,148	6,862,443	6,273,285	5,666,262	5,071,793

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
151 Howard University	10,754	13,067	12,146i	11,227i	10,308	10,258e	11,721	11,098
152 SUNY Hlth Sci Ctr - Syrcs	10,667	9,965	9,520	7,497	6,427	5,181	5,095	6,585
153 U of Neb Med Ctr at Omaha	10,518	9,078	8,572	7,765	7,243	6,643	6,608	4,594
154 Univ of Central Florida	10,406	9,354	11,153	3,476	2,701i	1,926e	1,503	2,239i
155 Montana State University	10,109	9,052	8,781	10,710	8,727i	6,745	7,060	5,388
156 Univ of Maine Orono	10,062	9,046	8,288	7,048	7,787	8,584	10,653	8,444
157 Northeastern University	9,961i	10,217	10,201	8,966	8,088	7,519	6,975	6,434i
158 Desert Research Institute	9,795	8,767	8,968	8,068	6,539	5,811	4,737	4,406
159 Texas Tech University	9,323	9,349	10,939	11,620	11,089	10,501	9,057	7,359i
160 Boston College	8,673	6,798	5,824	5,891	4,765	4,550i	4,336	4,604i
Total, 1st 160 insts.	9,631,705	9,074,793	8,486,285	7,749,436	6,936,117	6,341,003	5,734,007	5,132,944
161 NC Ag & Tech State Univ	8,205	7,503	5,752	5,717	3,603	4,763	4,373	4,124
162 Medical Col of Georgia	8,081	8,045	7,392	7,621	7,705	7,331	6,387	5,604
163 Wright State University	8,047	7,426	5,714	[illegible]12	3,695	3,939	2,956	3,112
164 Hahnemann University	8,037i	8,244	7,809	6,818	6,792	9,094	9,520	6,656
165 San Jose State University	7,978	7,370	7,220	5,944	5,614i	5,284i	4,954i	4,624i
166 U of Arkansas Med Sci Cam	7,807	6,654	5,258	5,846	4,561	3,773	3,417	3,291
167 Univ of South Alabama	7,798	7,237	6,966	5,273	4,715	4,866	4,652	4,051
168 Drexel University	7,559	6,761	6,371	6,600	7,870	6,635	5,623	4,217
169 College of William & Mary	7,283	6,460	5,349	4,942	4,020	4,100	4,150	2,624
170 Eastern VA Medical School	7,093	7,782	6,887	5,291	2,611	2,092i	1,576i	1,060i
Total, 1st 170 insts.	9,709,593	9,148,275	8,551,003	7,808,500	6,987,303	6,392,880	5,781,615	5,172,307
171 Southern Ill U-Carbondale	7,092	8,035	6,571	6,816	6,045	5,644	5,668	4,717
172 Brigham Young University	7,082	5,357	4,785	5,660	5,020	4,128i	3,237	2,747
173 Meharry Medical College	7,014	6,391	6,397	5,125	4,414	3,759i	3,107i	2,455i
174 Rush University	7,010	6,083	7,582	6,553	7,823	7,191	6,649	6,015
175 Univ of Texas at El Paso	6,972	5,451	2,561	1,893	2,068	1,493	950	929
176 Oregon Grad Inst Sci/Tech	6,962	6,837	6,582	6,513	4,997	4,218i	3,441i	2,664
177 North Dakota State Univ	6,882	6,417	5,292	4,210	2,870	1,970	2,622i	3,273i
178 Michigan Tech University	6,870	6,045	5,210	6,226	4,757	3,969	3,901	4,496
179 Univ of Wis-Milwaukee	6,808	6,715	5,447	4,662	3,939	3,643	3,211	3,505
180 University of Louisville	6,750	8,637	5,953	5,438	4,517	3,227	2,744	3,395
Total, 1st 180 insts.	9,779,035	9,214,243	8,607,383	7,861,596	7,033,753	6,432,122	5,817,145	5,206,503
181 Univ of Sthrn Mississippi	6,736	3,944	3,588	2,484	1,858	1,311	1,025	797i
182 Old Dominion U Res Fdn	6,576	7,036	6,175	5,334	4,444	4,297i	4,151i	4,005
183 University of Lowell	6,541	4,662	5,974	5,608	5,087	6,096	3,838	2,059
184 Clark Atlanta University	6,538	3,269i	0e	--	--	--	--	--
185 Colorado School of Mines	6,487	5,310	4,435	4,997	5,146	4,718	3,841	3,142
186 Mercer University	6,388	3,590	1,812	386	381	313	152	178i
187 Catholic Univ of America	6,301	6,783	6,077	5,446	5,061	3,777	4,003	3,603
188 Albany Medical College	6,291	6,073	7,259	7,915	8,795	8,483i	8,175i	7,867i
189 Med Col of Ohio at Toledo	5,970	5,956	5,855	4,530	5,756	5,450i	5,145i	4,840i
190 Southern Methodist Univ	5,966	11,000e	6,244	5,315	4,005	3,329i	2,654	1,886
Total, 1st 190 insts.	9,842,829	9,271,866	8,654,802	7,903,611	7,074,286	6,469,896	5,850,129	5,234,880
191 N Mex Inst Mining & Tech	5,718i	5,610	7,183	5,492	8,923	7,130	5,891i	4,653
192 Polytechnic University	5,600	7,025	6,824	6,561	6,729	5,771	4,821	4,398
193 CUNY Hunter College	5,524	4,531	4,065	4,223	4,373	4,031	2,950	2,125
194 Alabama A & M University	5,481	5,560	4,801	5,121	4,356	3,830i	3,304i	2,778
195 The University of Alabama	5,427	6,941	6,542	6,376	5,139	3,455	3,242	2,464i
196 Virginia State University	5,347	2,744	2,056	2,476	2,326i	2,176i	2,026	2,293
197 Chas R Drew U of Med & Sc	5,311	4,104i	2,898	2,826	2,913	1,942i	971i	0
198 Kent State University	5,171	4,656	2,613	3,027	2,993	2,218	2,225	1,947
199 Morehouse School of Med	5,020i	5,149	4,238	1,815	0	0i	0i	0
200 Univ of Texas at Dallas	4,822	5,868	6,812	7,109	7,850	6,029	5,461	4,748
Total, 1st 200 insts.	9,896,250	9,324,074	8,702,834	7,948,637	7,119,888	6,506,478	5,881,020	5,260,286

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
201 University of Denver	4,799i	7,476	6,825	6,453	8,742	9,518	10,265e	11,012e
202 U of MD Baltimore County	4,723	4,147	3,457	3,626	2,743	2,437	2,250	1,699
203 Northern Illinois Univ	4,617	3,251	2,948	2,360	1,897	1,870	1,793i	1,718i
204 Ohio University	4,539	4,140	3,722	3,540	2,828	2,893	2,295	1,834
205 Cleveland State Univ	4,528	3,695	2,760	2,047	2,019	1,648	1,498	1,250
206 American University	4,426	3,532	3,480	3,623	2,980	2,425i	1,870i	1,315i
207 Univ of Missouri Rolla	4,360	3,863	3,459	3,670	4,261	3,906	4,074	3,994
208 Southern U & A&M College	4,332	4,094	3,233	3,112	2,196	2,715	3,071	3,023
209 Clarkson University	4,229	3,841	4,359	5,141	5,253	4,676	3,296	2,741
210 Tuskegee University	4,137	4,783	4,967	3,543	2,598	1,689i	781	890i
Total, 1st 210 insts.	9,940,940	9,366,896	8,742,044	7,985,752	7,155,405	6,540,255	5,912,213	5,289,762
211 Illinois Inst of Tech	4,114	3,887	3,947	5,277	6,586	3,986	4,510	4,647
212 South Dakota State Univ	4,102	3,666	3,254	3,343	3,022	3,266	492	2,375
213 N J Inst of Technology	4,080	2,731	1,082	1,085	847	940	881	777
214 George Mason University	4,044	2,494	1,171	1,480	571	474i	379i	284
215 Univ of P R-Med Sci Cmpus	3,974	5,366	5,235	4,218	5,389	5,078i	4,768i	4,458i
216 Tennessee State Univ	3,701	3,290	3,382	3,382	2,717	2,660	2,412e	2,164
217 University of Montana	3,692	3,468	2,771	2,925e	2,572	2,337i	2,103e	1,975i
218 U Hlth Sci/Chcgo Med Sch	3,650	3,547	3,269	3,246	2,147	1,784	1,636	1,501i
219 East Carolina University	3,612	3,499	2,690	2,668	1,919	2,193	1,635i	1,078
220 Northern Arizona Univ	3,563	2,749	2,683	2,315	1,922	1,101	1,213	741
Total, 1st 220 insts.	9,979,472	9,401,593	8,771,528	8,015,691	7,183,097	6,564,074	5,932,242	5,309,762
221 Georgia State University	3,516	3,621	2,507	2,340	2,106	1,161	978	1,033
222 Jackson State University	3,429	3,381	3,624	2,801	2,040	1,862i	1,688i	1,514i
223 University of Akron	3,411	3,005	2,525	2,199	1,785	1,824	1,350	1,444
224 Prairie View A & M Univ	3,373	3,406	3,568	1,560e	1,334	1,824i	2,313i	2,802i
225 Hampton University	3,345	2,307	2,168	--	--	--	--	--
226 Texas Col of Osteo Med	3,135	2,031	2,518	2,508	2,381	1,914	1,816i	1,718i
227 SUNY at Binghamton	3,130	3,702	2,914	2,732	2,773	3,341	3,165	3,084
228 Univ of Missouri Kan City	3,123	2,767	2,391	1,485	812	670	373	322
229 Stevens Institute of Tech	3,116	2,960	2,532	2,838	4,100	3,839i	3,579i	3,319
230 Worcester Poly Institute	3,050	2,365	2,411	1,655	1,087	1,191i	1,292i	1,393i
Total, 1st 230 insts.	10,012,100	9,431,138	8,798,686	8,035,809	7,201,515	6,581,700	5,948,796	5,326,391
231 University of Toledo	2,997	2,101	1,966	1,894	1,583i	1,273	1,005	829
232 Memphis State University	2,954	2,666	2,299	1,647	1,268	908	650	578
233 Florida Atlantic Univ	2,953	2,010	1,295	847	648	659	543e	494
234 Univ. of Puerto Rico	2,860	2,980	2,855	3,662	3,217	2,927i	2,638i	2,349i
235 U of MD Center For EES	2,857	2,379	2,519	2,542	2,629	2,227	1,572	920
236 Oakland University	2,852	1,882	2,767	2,475	3,035	2,747i	2,461i	2,175i
237 Lincoln University	2,763	2,600	2,706	--	--	--	--	--
238 Univ of Tex at Arlington	2,741	1,795	1,406	2,255	1,667	955	930	832
239 Creighton University	2,580	2,405	2,386	1,828	1,520i	1,213i	906	913
240 Portland State University	2,580	2,693	1,999	1,923	1,999	1,676i	1,353	1,177
Total, 1st 240 insts.	10,040,237	9,454,649	8,820,884	8,054,882	7,219,081	6,596,285	5,960,854	5,336,658
241 Loma Linda University	2,529	3,349	2,294	3,867	4,801	3,834i	2,867	2,532i
242 Texas Christian Univ	2,430	1,362	488	302	493	636	447	291
243 Xavier University of LA	2,424	1,902	1,294	--	--	--	--	--
244 U of the Virgin Islands	2,262i	2,639e	2,600	2,578	1,447e	1,043	742	581
245 Air Force Inst of Tech/Nr	2,243	2,200	1,800i	1,400	456	370i	285	146
246 Univ of Ark Pine Bluff	2,176	1,188	1,148	1,199	1,047	1,010	1,002	885
247 CUNY Grad Sch & Univ Ctr	2,161	2,990	2,112	1,690	1,848	1,833	1,056	807
248 SUNY Col of Env Sci & For	2,126	1,973	1,883	1,669	1,209	1,379i	1,549	1,597i
249 Marquette University	2,068	1,855	1,487	1,671	1,080	965	1,274	1,152
250 S Dak Sch Mines & Tech	2,056	2,268	2,128	1,815	1,462	1,251	1,207	1,138i
Total, 1st 250 insts.	10,062,712	9,476,375	8,838,118	8,071,073	7,232,924	6,608,606	5,971,283	5,345,787

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
251 Miami University (Ohio)	2,050	1,365	1,659	1,479 i	1,301 i	1,123 i	945 i	767
252 Fort Valley State Univ.	2,047	1,938	1,741	--	--	--	--	--
253 Kentucky State University	2,026	2,856	1,721	1,697	1,827	1,636 i	1,446 i	1,256
254 CUNY Queens College	1,989	1,987	1,919	1,612	1,461 i	1,312 i	1,163 i	1,014 i
255 Univ of North Texas	1,942	1,974	2,813	2,828	3,022	2,506	2,482	2,805
256 Lamar University	1,914	1,317	388	2	64	58	62	10
257 Texas Southern Univ	1,810	1,363	1,293	1,419	1,263 i	1,107 i	951	302
258 Wichita State University	1,768	1,041	1,921	3,228	1,175	746	936	762
259 Univ of N C at Greensboro	1,666	806	596	278	370	256	320	256
260 Alcorn State University	1,665	1,487	1,850	1,692 i	1,623 i	1,554 i	1,485	1,359 i
Total, 1st 260 insts.	10,081,589	9,492,509	8,854,019	8,085,308	7,245,030	6,618,904	5,981,073	5,354,318
261 Florida Inst of Tech	1,640	1,251	898	552	577	656	712	703
262 Bowling Green State Univ	1,602	1,882	1,770	1,475	1,037	1,338	1,060	1,034
263 University of D C	1,585	1,455	1,330 i	1,205	738	1,706	1,508	678
264 Wentworth Inst of Tech	1,460	1,435	1,383	1,457	1,431 i	1,405 i	1,379 i	1,353 i
265 Wesleyan University	1,458	1,949	2,193	2,007	1,890	1,841	2,104	2,932 i
266 Inst Paper Sci and Tech	1,408	965	1,382	1,049	1,469	867	658	604
267 Univ of Wis-Superior	1,402	1,550	1,495	1,309	1,414	1,253	1,243	1,116
268 Nova University	1,395	1,341	981	839	779	632 i	486	564
269 U of MD Eastern Shore	1,371	1,552	2,203	1,736	1,522	1,606	1,414 i	1,223 i
270 Ponce School of Medicine	1,347	919	782	642	602	607	11 i	0
Total, 1st 270 insts.	10,096,257	9,506,808	8,868,436	8,097,579	7,256,489	6,630,815	5,991,648	5,364,525
271 Langston University	1,310	1,200	1,961	--	--	--	--	--
272 South Carolina St College	1,309	1,308	1,015 i	721	810 i	899 i	988 i	1,077 i
273 Fordham University	1,303	1,723	2,063	1,752	1,805	1,525 i	1,245 i	965
274 University of Tulsa	1,264	1,037	926	911	823 i	736 i	649	510
275 Illinois State University	1,241	1,193	973	1,011	854	642	624 i	609 i
276 Univ of N C at Charlotte	1,226	1,327	817	483	434 i	386 i	338 i	290 i
277 Univ of Wis-Stout	1,173	121	39	82	63 i	48 i	33 i	18 i
278 Amherst College	1,132	1,233	1,047	1,091	1,015 i	942 i	869 i	796 i
279 Louisiana Tech University	1,072	2,629	2,842	760	828	745 i	663 i	581 i
280 East Tennessee State Univ	1,060	1,219	919	447	486	427 i	368	220
Total, 1st 280 insts.	10,108,347	9,519,798	8,881,037	8,104,837	7,263,607	6,637,165	5,997,425	5,369,591
281 Univ of Missouri St Louis	1,046	1,167	1,430	779	698	913	592	574
282 University of the Pacific	1,039	897	990	941 i	894 i	847 i	800 i	753 i
283 SUNY College Plattsburgh	1,027	930	755	912	742	469	278	133
284 SUNY College Buffalo	1,000	520	583 i	641 i	699 i	757 i	815 i	873 i
285 Calif St Poly Univ Pomona	997	366	362	503	422 i	345 i	268 i	191 i
286 Bryn Mawr College	976	1,252	536	687	696	435	427	372
287 Tenn Technological Univ	949	1,286	743	731	711	606 i	501	401
288 Clark University	936	919	794	820	942	1,139 i	1,332 i	1,525 i
289 Univ of Southwestern LA	929	874	818	863	589	518 i	448	457 i
290 Morehouse College	917	868	997	--	--	--	--	--
Total, 1st 290 insts.	10,118,163	9,528,877	8,889,045	8,111,714	7,270,000	6,643,194	6,002,886	5,374,670
291 Delaware State College	915	920	920	--	--	--	--	--
292 Marshall University	883	1,244	1,647	1,484	901	818	836	772
293 Western Michigan Univ	845	585	488 i	391	227	306	196	217
294 Eastern Washington Univ	791	1,081	738	532	488	559	519	614 i
295 Univ of South Dakota	759	940	784	685	645 i	605 i	565 i	525
296 Norfolk State University	726	825	648	400	266	456	588	584 i
297 NE Ohio Univ Med School	724	708	811	719	612	681	673	657
298 Villanova University	708	943	885	223	459	366 i	274	221
299 Baylor Col of Dentistry	696	682	641	525	450	407	198	186
300 Tougaloo College	684	566	787	--	--	--	--	--
Total, 1st 300 insts.	10,125,894	9,537,351	8,897,394	8,116,673	7,274,048	6,647,392	6,006,735	5,378,646

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
301 Morgan State University	683	655	638	742e	346	860	751i	645i
302 Central State University	680	2,323	449	--	--	--	--	--
303 Texas A & I University	664	661	1,118	847	742i	640i	538i	436i
304 Northeast Louisiana Univ	663	675	56	35	25	6	9	14
305 Selma University	650	790	816	--	--	--	--	--
306 CUNY Col Staten Island	634	576	579	371	334i	301i	268i	235i
307 CUNY York College	622	655	754	673	559	634i	708	483
308 U Ctrl Del Caribe Esc Med	617	546	640	525	577	809	165	0
309 Winston-Salem State Univ	617	532	650	--	--	--	--	--
310 Fisk University	616	1,156	1,131	1,379	777	661i	545i	429i
Total, 1st 310 insts.	10,132,340	9,545,920	8,904,225	8,121,245	7,277,408	6,651,303	6,009,719	5,380,888
311 Bethune Cookman College	548	494	420	--	--	--	--	--
312 Barnard College	540	546	665	587	542i	499i	456i	413i
313 Albany State College	536	516	653	348	263e	207i	152i	97
314 Cal Poly St U San Luis Ob	534	496	475	653	586i	523i	460i	397i
315 Idaho State University	532	549	378	226	268	341	307	327
316 St John's University (NY)	528	519	361	308	290i	274i	258e	138e
317 De Paul University	507	623	772	468	189	142i	96e	94
318 Univ of West Florida	468	213	327	436	709i	982i	1,255i	1,528i
319 Texas Woman's University	466	476	325	243	173	209	211	137
320 Union College (NY)	457	944	478	221	205i	191i	177	172
Total, 1st 320 insts.	10,137,456	9,551,296	8,909,079	8,124,735	7,280,633	6,654,671	6,013,091	5,384,191
321 Johnson C. Smith Univ	454	467	480	--	--	--	--	--
322 Alabama State University	442	403	456	--	--	--	--	--
323 Morris Brown College	442	464e	164	--	--	--	--	--
324 Lincoln University (PA)	437	632	692e	789	591i	394i	197i	0
325 SUNY College Brockport	425	297	230	155	144i	135i	126i	117i
326 Hofstra University	418	445	256	91	215	201	210	128
327 Santa Clara University	406	550	672	712	746e	642	843	790
328 Southern Univ-New Orleans	393i	459i	420e	--	--	--	--	--
329 Augsburg College	382	139	115	90	80i	71i	62i	53i
330 Claflin College	381	203	0e	--	--	--	--	--
Total, 1st 330 insts.	10,141,638	9,555,355	8,912,564	8,126,572	7,282,409	6,656,114	6,014,529	5,385,279
331 Occidental College	381	300	442	376	334i	296i	258i	220i
332 Fairleigh Dickinson Univ	370	2,364	2,355	3,274	2,402	1,501	1,007	1,007
333 Tarleton State University	370	88	0	0	0	0i	0i	0
334 Phila Col of Pharm & Sci	368	381	288	49	47	83	58	81
335 Univ of Wis-Parkside	362	581	651	497	465i	433i	401i	369i
336 Knox College	358	298i	239	164	145i	126i	107i	88i
337 Spelman College	358	348	272	--	--	--	--	--
338 CUNY Bernard Baruch Col	344	207	287	125	125i	125i	125i	125i
339 New Sch For Soc Research	344	293	251	384	422	298i	174i	50
340 Baylor University	324	369	346	353	329	263i	200i	137i
Total, 1st 340 insts.	10,145,217	9,560,584	8,917,695	8,131,794	7,286,678	6,659,239	6,016,859	5,387,356
341 Alfred University	320	344	449	285	382	349	435	129
342 University of Detroit	309	245	55	34	82i	129i	176i	223i
343 Indiana State University	307	314	340	340	184	203	234i	263i
344 Univ of Nebraska at Omaha	294	187	62	56	75	24	1	0
345 Smith College	291i	298	903	411	375i	339i	303i	267i
346 Adelphi University	288i	295i	280	192i	105	138i	169i	200i
347 Stephen F Austin St Univ	282	289	332	283	233	308i	382i	456
348 Univ of Wis-Oshkosh	280	238	161	147	127i	109i	91i	73i
349 Fayetteville State Univ	275	154	258	--	--	--	--	--
350 Rust College	271	156	214	--	--	--	--	--
Total, 1st 350 insts.	10,148,134	9,563,104	8,920,749	8,133,542	7,288,241	6,660,838	6,018,650	5,388,967

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
351 Pomona College	263	266	370	358	435i	512i	589i	666i
352 Univ of Wis-La Crosse	258	185	108	79	116	70	227	218
353 Kirksville Col Osteo Med	254	198	306	517i	727	641i	562i	483i
354 Duquesne University	250	216	68	68	68	54i	45i	36i
355 Cal Sch Prof Psych-L A	245	1,163	1,383	322	164	164	0	0
356 Bowie State University	234	35	0	--	--	--	--	--
357 Sam Houston State Univ	229	93	84	73	115	114	95	177
358 Ball State University	226	153	178	197	317	293	272	209
359 Canisius College	221	524	194	279	243i	211i	179i	147i
360 North Carolina Cntrl Univ	219i	199	422e	350	317i	286i	255i	224i
Total, 1st 360 insts.	10,150,533	9,566,136	8,923,862	8,135,785	7,290,743	6,663,183	6,020,874	5,391,127
361 Catholic U of PR	214	265	492	416	513	508i	504i	500
362 Coppin State College	212	387	388	--	--	--	--	--
363 Savannah State College	212	221	179	--	--	--	--	--
364 West Virginia State Col	210	138	75	--	--	--	--	--
365 Cal Sch Prof Psych-Fresno	208	985	1,566	940	476	238i	0	0
366 Grambling State Univ	200i	182	106	64	128	131i	132i	133i
367 Univ of Wis-Green Bay	198	267	252	165	212i	258i	304i	350i
368 Oakwood College	179	226	0	--	--	--	--	--
369 Chicago Col of Osteo Med	175	318	314	526	419	119	101	127
370 Philander Smith College	154	120	154	--	--	--	--	--
Total, 1st 370 insts.	10,152,495	9,569,245	8,927,388	8,137,896	7,292,491	6,664,437	6,021,915	5,392,237
371 SUNY College New Paltz	153	112	54	1	103	85i	67i	49i
372 Seton Hall University	153i	183i	213i	243i	273i	303i	333i	363i
373 St Olaf College	142	151	97	153	166i	178i	190i	202i
374 Monmouth College (NJ)	135	46	100	0	0i	0i	0i	0i
375 SUNY College Geneseo	135	200	151	173	142i	111i	80i	49i
376 Univ of Wis-Stevens Point	128	167	226	180	208i	236i	264i	292i
377 Univ of Wis-Eau Claire	126	268	355	254	218i	182i	146i	110i
378 Abilene Christian Univ	125	103	89	66	56i	47i	38i	29i
379 University of Portland	121	311	0	200	160i	120i	80i	40i
380 East Stroudsburg U of PA	120	0	165	107	90i	75i	60i	45i
Total, 1st 380 insts.	10,153,833	9,570,786	8,928,838	8,139,273	7,293,907	6,665,774	6,023,173	5,393,416
381 SUNY St Coll of Optometry	118	294	292	286	398	344i	292i	240i
382 Univ of Wis-River Falls	118	27	43	35	28i	23i	18i	13i
383 Southern Univ-Shreveport	116i	131	148	--	--	--	--	--
384 Central Michigan Univ	110	60	179	276	134	110	0	111
385 Andrews University	101	96	24	23e	20i	19i	18i	17i
386 Trenholm State Tech Col	100	5	5	--	--	--	--	--
387 Columbia U Teachers Col	95	181	230	186	460	367i	274i	181i
388 Univ of Northern Colorado	91	54	66	0	10	0	0	0
389 SUNY College Cortland	88	75	102	78	67i	58i	49i	40i
390 Seattle University	88	52	74	64	0	5i	10e	0
Total, 1st 390 insts.	10,154,858	9,571,761	8,930,001	8,140,221	7,295,024	6,666,700	6,023,834	5,394,018
391 East Texas State Univ	85	113	89	1	12	8	0	0
392 Phila Col Osteopathic Med	81i	83	302	179	168	71	35i	0
393 Chapman University	79i	72	75e	75	60i	48i	36i	24i
394 SUNY College Oswego	75	71	76	58	236	229i	223	187
395 Sul Ross State University	71	171	98	107	96i	87i	78i	69i
396 Claremont Univ Ctr & Grad	66	47	106	337	343	354i	364i	374i
397 Providence College	65	0	0	0	0	0i	0	0
398 Miss Valley State Univ	64	43	14	31	0	0i	0i	0
399 Bennett College	62	358	229	--	--	--	--	--
400 Drake University	61	3	12	21	26i	30i	34i	38i
Total, 1st 400 insts.	10,155,567	9,572,722	8,931,002	8,141,030	7,295,965	6,667,527	6,024,604	5,394,710

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
401 Jarvis Christian College	60	75	60	--	--	--	--	--
402 Univ of Northern Iowa	58	136	108	91	74i	59i	44i	29i
403 Southern Oregon St Col	56	43	56	0	0	0	2	8
404 Goucher College	54	32	27	25	33i	37i	41i	45i
405 Knoxville College	47i	55i	50	--	--	--	--	--
406 Kutztown Univ of Penn	43	37	37	31	35i	39i	43i	47i
407 Colorado College	34	5	0	0	11i	16i	21i	26i
408 Pacific Lutheran Univ	33	244	10	35	43i	44i	45i	46i
409 Univ of Wis-Whitewater	31	42	107	37	28i	21i	14i	7i
410 SUNY College Fredonia	27	59i	90i	121	101i	83i	65i	47i
Total, 1st 410 insts.	10,156,010	9,573,450	8,931,547	8,141,370	7,296,290	6,667,826	6,024,879	5,394,965
411 Northeast Missouri St U	26	18	122	38	50	25i	0	8i
412 Arkansas State University	23	119	83	46	61i	73i	85i	97i
413 Northeastern Ill Univ	22	68	26	0	13i	22i	31i	40i
414 Long Island University	20	57	191	346	247	64	11	19
415 Univ of Missouri Sys Off	20	116	678	756	858	759	627	382
416 W VA Schl Osteopathic Med	14	23	30	22	11	5i	0	0
417 West Texas State Univ	12	40	120	124	177	66	76	132
418 SUNY College Potsdam	11	22	27	11	25i	33i	41i	49i
419 Montclair State College	4	0	0	8i	9i	10i	11i	12i
420 SUNY College Oneonta	1	22	0	0	17i	31i	45i	59i
Total, 1st 420 insts.	10,156,163	9,573,935	8,932,824	8,142,721	7,297,758	6,668,914	6,025,806	5,395,763
421 Univ of Wis-Platteville	1	0	0	0	1i	1i	1i	1i
422 Antioch University	0	0	0	0	1i	2i	3i	4i
423 Bemidji State University	0	0	11	14	8i	6i	4i	2i
424 Benedict College	0	0	0	--	--	--	--	--
425 Biola University	0	0	0	0	0	0	0	0
426 Cal Sch Prof Psych-Berkly	0	0	0	0	0	0	0	0
427 Cal Sch Prof Psych-S D	0	0i	0	0	0	0i	0	0
428 Calif St Univ Stanislaus	0	0	0	0	0i	0i	0i	0i
429 Cheyney University of PA	0	0	0e	--	--	--	--	--
430 Col Osteo Med of Pacific	0	0	0	0	0	0	0	0
Total, 1st 430 insts.	10,156,164	9,573,935	8,932,835	8,142,735	7,297,768	6,668,923	6,025,814	5,395,770
431 Dillard University	0	0	0	0	0	0i	0i	0
432 Elizabeth City State Univ	0	15	26	--	--	--	--	--
433 Fielding Institute	0	0	0	0	0	0	0	0
434 Fuller Theological Sem	0	0	3	0	0	9	0	0
435 Grand Valley State Univ	0	0	7	0	5i	10i	15i	20i
436 Institute of Textile Tech	0	0	0	0	0	0i	0i	0i
437 Mass Col Phar/Allied Hlth	0	0i	0	5i	9i	13i	17i	21i
438 Mayo Grad School of Med	0	0	0	0	0	0i	0i	0
439 Milwaukee School of Eng	0	0	0	0	0i	0i	0i	0i
440 New York Inst Technology	0i	0	0	352	373	442i	510	771
Total, 1st 440 insts.	10,156,164	9,573,950	8,932,871	8,143,092	7,298,155	6,669,397	6,026,356	5,396,582
441 Northwestern St Univ La	0	0	0	0	2i	3i	4i	5i
442 Oral Roberts University	0	0	290	388	378i	369i	360	0
443 Paul Quinn College	0	0	0	--	--	--	--	--
444 Rand Grad Inst Pol Stdies	0	0	0	0	0	0i	0	0i
445 Shaw University	0	0	0	--	--	--	--	--
446 Slippery Rock Univ of PA	0	0	0	0	0i	0i	0i	0i
447 St Bonaventure University	0	0	0	0i	0	0i	0i	0
448 St Louis Community Col	0	0	0	0	0i	0i	0i	0i
449 Stillman College	0	0	0	--	--	--	--	--
450 Talladega College	0	0	350	--	--	--	--	--
Total, 1st 450 insts.	10,156,164	9,573,950	8,933,511	8,143,480	7,298,535	6,669,769	6,026,720	5,396,587

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-33. Federally financed R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Federally financed							
	1991	1990	1989	1988	1987	1986	1985	1984
451 The Wright Institute	0	0	0	0	0	0	199i	398i
452 U of California System	0	0	0	473	528	547	524	465
453 US International Univ	0	88	61	0	0	0	0i	0
454 Union Institute	0	0	0	0	0	0i	0i	0
455 Univ Osteo Med & Hlth Sci	0	43	86	88	0	0i	0i	0
456 Univ of Health Sciences	0	0	0	0	0	0i	0i	0
457 Voorhees College	0	0	0	--	--	--	--	--
458 Wiley College	0	0	0	--	--	--	--	--
459 Xavier University	0i	0	0	0	45i	88i	131i	174i
Total, 1st 459 insts.	10,156,164	9,574,081	8,933,658	8,144,041	7,299,108	6,670,404	6,027,574	5,397,624
Total, all other sampled insts.	0	1,368	715	47,109	42,120	39,671	35,454	32,022
Estimated total non-sampled insts.	64,341	60,275	57,105	0	0	0	0	0

1/ Includes Applied Physics Laboratory with $430 million in federally financed R&D expenditures.

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-34. Non-Federal R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Non-Federal							
	1991	1990	1989	1988	1987	1986	1985	1984
Total, all institutions	7,399,704	6,708,555	6,024,640	5,274,644	4,812,548	4,217,580	3,623,002	3,190,116
1 Texas A & M University	190,278	179,799	157,122	140,998	144,421	131,416e	113,553e	104,196e
2 University of Minnesota	166,584	148,236	125,734	116,326	113,378	101,435	85,546	78,734
3 University of Michigan	157,306	130,122	106,030	89,315	87,332	69,790	57,566	56,646
4 Univ of Wis-Madison	142,837	130,979	116,530	109,034	104,828	92,315	84,436	73,486
5 Cornell University	136,057	128,895	128,749	117,997	109,367	90,740	83,907	68,683
6 Univ of MD College Park	128,566	99,612	90,586	80,166	71,045	57,881	52,540	47,028
7 University of Ill Urbana	124,632	108,466	96,192	87,760	84,262	74,951	59,027	48,016
8 Univ of Texas at Austin	123,851	118,610	99,026	82,626	80,536	70,172	61 628	58,182
9 Pennsylvania State Univ	121,604	120,270	105,284	82,424	72,641	63,858	43,097	34,617
10 Univ of Cal Davis	120,703	120,651	107,579	91,220	87,176	75,239	67,210	60,355
Total, 1st 10 insts.	1,412,418	1,285,640	1,132,832	997,866	954,986	827,797	708,510	629,943
11 University of Georgia	117,973	112,878	103,156	97,989	89,181	79,561	62,850	57,248
12 Univ of Cal Berkeley	117,777	99,344	85,596	69,807	66,445	56,412	53,121	46,158
13 University of Arizona	111,908	102,713	93,586	82,155	73,702	62,817	54,071	47,535
14 Ohio State University	106,377	99,691	98,001	85,517	64,691	56,205	50,110	41,342
15 Rutgers the St Univ of NJ	102,513	97,008	88,678	75,946	67,377	55,835	35,445	31,584
16 N C State Univ at Raleigh	95,712	87,346	85,658	76,030	68,985	61,844	59,767	50,156
17 Louisiana State Univ Sys	94,400	87,047	82,243	79,120	70,981	63,901	64,194	53,858
18 Iowa St U of Sci & Tech	91,864	82,227	74,346	63,420	58,669	55,266	51,246	41,717
19 Baylor Col of Medicine	82,332	79,329	65,345	45,989	40,345	22,264	21,448	19,368
20 Univ of Cal Los Angeles	82,148	82,353	68,826	62,392	58,068	46,490	40,055	35,610
Total, 1st 20 insts.	2,415,422	2,215,576	1,978,267	1,736,231	1,613,430	1,388,392	1,200,817	1,054,519
21 Northwestern University	82,091	70,968	61,481	48,510	39,634	33,423	30,020	27,537
22 Mass Inst of Technology	81,234	77,954	72,017	60,165	57,631	56,629	53,031	47,196
23 Univ of Cal San Francisco	77,764	63,021	59,540	55,542	52,134	42,091	35,733	30,582
24 VA Polytech Inst & St U	77,390	75,474	65,669	56,184	48,423	45,191	36,316	30,023
25 UT MD Anderson Cancer Ctr	76,674	62,394	56,911	48,513	43,255	42,014	36,729	32,938
26 Georgia Institute of Tech	75,253	73,351	76,616	64,253	57,210	47,025	40,096	37,266
27 Harvard University	73,925	66,722	66,068	57,426	49,119	42,887	34,507e	30,900e
28 University of Florida	73,480	75,064	65,039	52,392	54,934	48,776	49,267	45,111
29 University of Connecticut	73,370	69,872	63,144	50,677	44,691	38,145	36,211	24,575
30 Michigan State University	71,603	68,766	69,715	66,549	66,821	53,136	45,910	41,293
Total, 1st 30 insts.	3,178,206	2,919,162	2,634,467	2,296,442	2,127,282	1,837,709	1,598,637	1,401,940
31 Univ of Missouri Columbia	69,285	63,759	51,743	46,195	40,962	37,585	32,188	28,750
32 Johns Hopkins Univ	68,856	69,064	58,211	48,007	34,606	28,130	31,577	19,032
33 Purdue University	68,515	65,915	60,344	54,634	50,829	45,651	40,324	39,954
34 Stanford University	68,089	43,690	47,344	44,932	36,499	31,086	26,762	25,155
35 Univ. Of Tennessee System	64,843	58,000	55,451	50,282	45,609	37,541	33,370	26,390
36 Univ of Cal San Diego	60,971	54,477	45,512	40,694	40,296	32,804	29,918	25,638
37 Univ of Nebraska-Lincoln	60,030	54,912	42,478	35,340	31,554	34,335	30,653	28,725
38 Auburn University	54,634	52,166	38,635	34,494	34,599	36,037	26,042	21,529
39 University of Oklahoma	53,991	41,774	36,936	33,721	30,897	23,065	25,061	24,126
40 Univ of Pennsylvania	53,770	55,643	49,934	44,138	47,149	46,821	37,504	32,132
Total, 1st 40 insts.	3,801,190	3,478,562	3,121,055	2,728,879	2,520,282	2,190,764	1,912,036	1,673,371
41 Clemson University	53,642	52,443	44,215	36,227	37,479	31,413	22,361	23,232
42 University of Washington	53,299	41,960	39,259	30,474	41,878	44,599	28,132	27,162
43 Univ of Massachusetts	51,992	45,794	54,139	40,978	35,558	34,001	27,227	24,020
44 Oklahoma State University	51,736	47,941	39,539	43,786	37,845	37,417	37,261	39,557
45 University of Kentucky	49,501	45,347	42,522	41,279	28,781	32,034	30,890	29,136
46 Univ of South Florida	49,370	45,923	34,397	31,555	30,743	4,363	3,641	3,350
47 Duke University	49,353	34,655	32,054	27,728	21,631	15,952	12,462	10,232
48 Washington University	47,989	45,490	31,590	28,986	25,662	21,827	19,183	19,855
49 Univ of Ill Chicago	47,424	41,300	40,041	35,662	30,131	24,737	22,377	19,715
50 Univ of MD Balt Prof Sch	46,129	44,848	39,884	35,685	31,687	15,199	12,359i	9,520i
Total, 1st 50 insts.	4,301,625	3,924,263	3,518,695	3,081,239	2,841,677	2,452,306	2,127,929	1,879,150

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-34. Non-Federal R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Non-Federal							
	1991	1990	1989	1988	1987	1986	1985	1984
51 Oregon State University	45,100	40,144	42,243	40,076	36,012	36,861	33,651	26,838
52 SUNY at Buffalo	44,496	42,314	35,838	27,538	19,262	17,096	14,185	13,294
53 Yale University	44,387	35,744	32,304	29,236	28,875	28,472	18,323	17,802
54 Univ of Southern Cal	43,365	45,388	43,008	37,394	33,246	23,493	20,857	23,039
55 University of Iowa	43,051	36,732	31,629	30,182	21,931	21,099	16,864	15,302
56 Washington State Univ	42,987	39,972	32,476	29,958	27,591	26,277	25,311	25,396
57 Univ. of Colorado	42,902	38,329	34,575	31,974	29,132	29,689	24,057	26,353
58 Univ of Cal Riverside	41,213	39,086	37,629	36,311	36,157	33,255	30,369	27,106
59 Indiana University	40,630	32,036	23,459	21,028	21,130	19,136	17,269	15,080
60 Princeton University	39,667	39,955	35,738	29,646	21,584	15,590	15,135	13,130
Total, 1st 60 insts.	4,729,423	4,313,963	3,867,594	3,394,582	3,116,597	2,703,274	2,343,950	2,082,490
61 University of Kansas	39,563	34,358	30,691	26,843	27,662	26,016	21,290i	16,564i
62 Wayne State University	39,414	33,967	31,354	27,793	22,408	17,800	12,259	11,421
63 Univ of NC at Chapel Hill	39,196	30,645	28,817	24,316	21,225	20,829	20,212	9,530
64 Mississippi State Univ	38,584	37,066	35,976	31,449	28,018	31,032	30,225	28,100
65 Carnegie-Mellon Univ	37,740	35,651	36,556	31,042	29,946	30,214	22,626	20,368
66 Rockefeller University	37,331	38,457	32,753	31,136	28,777	27,478	29,112	28,640
67 Kans St U - Ag & App Sci	37,284	34,660	31,351	28,880	27,317	27,739	26,812	24,832
68 Arizona State University	37,243	33,259	22,196	20,504	24,754	20,039	16,397	13,017
69 University of New Mexico	37,203	32,279	29,036	22,867e	20,668e	14,046	12,541	9,819
70 Univ Alabama Birmingham	37,000	36,117	32,462	22,661	18,158	14,064	8,137	8,024
Total, 1st 70 insts.	5,109,981	4,660,422	4,178,786	3,662,073	3,365,530	2,932,531	2,543,561	2,252,805
71 UT SW Medical Ctr-Dallas	36,765	30,954	28,666	22,035	17,525	14,115	12,584	13,286
72 University of Virginia	35,673	38,014	30,067	27,090	22,594	18,931	16,501	9,868
73 Tulane University	35,068	28,076	21,100	18,892	16,557	16,451	13,673	11,625
74 Univ of Med & Dent of N J	34,681	31,044	26,468	20,178	15,233	14,482	8,768	7,552
75 Unif Serv Univ of Hlth Sc	34,250	24,792	14,356	3,378	0	100	83	0
76 Univ of Hawaii-Manoa	33,309	33,860	30,159	25,718	22,873	22,061	19,139	18,350
77 University of Cincinnati	33,153	29,495	29,233	24,493	21,760	16,610	17,785	17,397
78 Univ of Alaska Fairbanks	33,097	33,675	30,042	26,415e	25,909i	25,401i	24,893i	24,385i
79 Utah State University	32,405	27,485	27,495	24,510	19,234	19,537	15,810	16,659
80 Univ of South Carolina	32,007	26,890	22,825	16,181	15,121	14,246	11,960	8,496
Total, 1st 80 insts.	5,450,389	4,964,707	4,439,197	3,870,963	3,542,336	3,094,465	2,684,757	2,380,423
81 SUNY at Stony Brook	31,813	26,325	29,729	25,393	14,548	18,948e	15,549	13,802
82 Univ of Central Florida	31,529	21,264	19,838	7,831	6,870i	5,909e	4,611	4,808i
83 Emory University	31,354	30,407	18,216	17,228	22,191	18,296	4,570	4,626
84 Columbia Univ Main Div	31,105	26,499	25,433	21,418	16,886	16,980	16,457	16,418
85 University of Pittsburgh	30,390	27,016	30,048	26,147	22,123	18,254	15,082	12,872
86 New York University	30,210	27,755	23,308	23,126	22,798	23,688	23,329	19,390
87 West Virginia University	30,104	24,985	21,907	14,377	13,577	10,668	9,946	8,958
88 Univ of Cal Irvine	29,871	25,582	20,314	17,206	13,553	11,651	9,686	7,094
89 Univ of Ark Fayetteville	28,460	26,132	23,887	19,911	19,739	19,954	16,402	15,212
90 Case Western Reserve Univ	27,809	22,869	17,536	18,225	17,270	10,498e	9,416	7,880
Total, 1st 90 insts.	5,753,034	5,223,541	4,669,413	4,061,825	3,711,891	3,249,311	2,809,805	2,491,483
91 University of Miami	27,132	26,200	27,197	21,812	27,106	27,623	25,218	20,413
92 Rensselaer Polytech Inst	26,734	24,071	19,662	18,191	10,969	8,237	7,456	7,345
93 SUNY Hlth Sci Ctr - Syrcs	26,627	25,228	21,605	17,044	14,759	12,884	13,206	11,776
94 Temple University	26,048	23,285	20,250	20,804	17,661	14,037	8,270	6,921
95 University of Utah	25,852	26,721	21,521	18,406	13,968	9,050	8,790	8,810
96 Texas Tech University	25,671	24,775	22,987	17,754	17,301	14,825	9,531	9,233i
97 Florida State University	25,316	30,006	29,747	26,652	25,004	22,329	18,059	17,786
98 University of Rochester	24,903	23,367	22,948	21,526i	21,276	19,885	22,586	18,955
99 Colorado State University	24,785	23,223	17,779	14,769	13,658	12,767	15,469	16,397
100 University of Delaware	24,643	22,531	20,111	18,315	18,019	16,220	12,979	10,532
Total, 1st 100 insts.	6,010,745	5,472,948	4,893,220	4,257,100	3,891,612	3,407,168	2,951,369	2,619,651

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-34. Non-Federal R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Non-Federal							
	1991	1990	1989	1988	1987	1986	1985	1984
101 CUNY Mt Sinai Sch of Med	24,275	20,145	19,623	16,875	15,113	14,027	13,753	9,862
102 University of Idaho	24,258	21,124	19,672	19,108	15,350	14,081	6,804	6,572
103 U Tex Med Brnch Galveston	24,112	18,917	15,565	13,330	7,613	8,005i	8,397	7,920
104 University of Chicago	23,351	21,628	18,970	17,574	15,990	14,722	12,979	13,012
105 U of Houston	22,152	20,403	17,871	12,651	13,338	12,373	6,766	5,935
106 Southern Ill U-Carbondale	21,248	17,838	16,786	13,494	12,609	13,170	12,703	10,864
107 New Mexico State Univ	21,214	16,600	15,270	17,520	20,768	18,523	16,963	12,487
108 U Tex Hlth Sci Ctr Houstn	21,118	16,690	17,360	15,687	10,431	9,960	7,543	5,794
109 Virginia Commonwlth Univ	20,634	21,124	17,042	11,801	11,234	11,487	8,405	5,103
110 Rush University	20,349	15,201	14,159	13,274	8,519	6,778	4,644	5,773
Total, 1st 110 insts.	6,233,456	5,662,618	5,065,538	4,408,414	4,022,577	3,530,294	3,050,326	2,702,973
111 Montana State University	20,169	18,596	17,187	14,517	14,366i	14,215	12,643	14,470
112 U Tex Hlth Sci Ctr S Anto	18,998	16,232	13,177	12,145	12,007	10,386	10,148	9,361
113 Yeshiva University	18,890	18,902	16,272	16,560	14,005	13,338	10,862	7,399
114 Georgetown University	18,857	14,774	16,246	14,117	11,504	9,360	10,991	9,561
115 Univ of Nevada - Reno	18,445	9,527	9,494	7,878	7,138	5,660i	4,180i	2,700e
116 U of Neb Med Ctr at Omaha	17,340	8,766	8,719	6,919	5,249	5,116	3,654	3,907
117 Univ of P R-Mayaguez	17,325i	16,218	15,229	14,212	15,759	14,545i	13,333i	12,121i
118 Univ of Maine Orono	17,020	14,559	11,686	10,293	9,165	10,731	9,968	8,663
119 SUNY Col of Env Sci & For	16,923	16,698	15,338	11,248	10,481	9,870i	9,259	7,988i
120 Syracuse University	16,414	14,887	15,176	11,266	12,361	11,490	11,528	8,143
Total, 1st 120 insts.	6,413,837	5,811,777	5,204,062	4,527,569	4,134,612	3,635,005	3,146,892	2,787,286
121 Lehigh University	16,042	16,013	16,079	16,792	15,214	13,212	11,175	8,885
122 The University of Alabama	15,821	14,547	11,853	9,460	8,223e	7,766	4,557	3,430i
123 Univ of Cal Santa Cruz	15,815	12,492	11,108	9,900	10,790	7,166	7,326	5,938
124 U of VT & State Agr Coll	15,681	14,607	14,208	11,276	9,258	9,851	8,649	7,336
125 Medical College of Wis	15,384	13,028	13,519	13,428	14,667	7,756	7,587	6,867i
126 Dartmouth College	15,067	13,602	11,230	9,834	9,363	7,251i	5,139i	3,027
127 SUNY Hlth Sci Ctr - Brkln	14,875	8,299	8,971	7,620	6,514	5,611i	4,708i	3,805
128 Univ of Rhode Island	14,862	15,335	14,279	12,973	8,080	7,872i	7,664	2,400
129 Boston University	14,715	13,192	9,923	9,587	8,893	7,768	5,878	4,996
130 California Inst of Tech	14,706	15,153	14,564	13,780	15,479	15,068	9,005	7,019
Total, 1st 130 insts.	6,566,805	5,948,045	5,329,796	4,642,219	4,241,093	3,724,326	3,218,580	2,840,989
131 Brown University	13,932	9,844	9,058	6,406	6,086	6,573	5,699	4,477
132 U of MD Center For EES	13,348	13,273	11,222	10,140	9,400	7,515	2,747	2,324
133 Univ of Cal Santa Barbara	12,946	11,877	10,840	10,393	9,848	9,196	6,924	5,852
134 Michigan Tech University	12,797	9,992	9,976	8,095	7,899	8,417	7,748	6,729
135 Oregon Hlth Sciences Univ	12,764	14,179	10,935	11,269	10,683	8,177	6,857	5,573
136 Brandeis University	12,557	12,062	11,516	8,023	6,954i	5,887i	4,820	5,179
137 N J Inst of Technology	12,383	12,494	10,320	7,242	9,571	7,639	3,213	1,391
138 Drexel University	12,146	13,318	11,612	9,445	7,933	7,612	6,194	3,680
139 San Diego State Univ	11,826	7,877	7,076	6,682	5,587	3,927	2,818	1,521
140 Med Univ of S. Carolina	11,510	12,218	11,470	9,993	8,861	8,981	4,590	3,758
Total, 1st 140 insts.	6,693,014	6,065,179	5,433,821	4,729,907	4,323,915	3,798,250	3,270,190	2,881,473
141 College of William & Mary	11,225	11,332	10,045	3,089	2,674	1,823	6,638	3,249
142 Univ of New Hampshire	11,075	11,539	9,126	8,747	6,932	7,150	8,096	7,014
143 N Mex Inst Mining & Tech	11,052i	17,301	15,106	14,865	14,786	9,666	7,318i	4,969
144 Wake Forest University	10,829	9,472	8,645	7,542	4,824	4,208i	3,594i	2,980i
145 University of Wyoming	10,227	10,624	9,506	9,293	8,615	9,342	8,623	8,035
146 Univ of Tex at Arlington	10,146	3,934	5,658	5,415	4,093	3,995	2,230	1,482
147 University of Louisville	10,102	7,284	8,513	17,507	18,449	11,555	3,659	4,194
148 Univ of Missouri Rolla	10,072	10,422	14,233	15,153	10,451	10,121	6,318	5,451
149 Univ of Wis-Milwaukee	10,057	8,924	7,981	7,762	7,140	6,740	5,857	4,994
150 University of Akron	9,994	7,367	7,203	4,915	5,405	3,536	2,246	1,801
Total, 1st 150 insts.	6,797,793	6,163,378	5,529,837	4,824,195	4,407,284	3,866,386	3,324,769	2,925,642

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-34. Non-Federal R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	Non-Federal							
	1991	1990	1989	1988	1987	1986	1985	1984
151 Thomas Jefferson Univ	9,966	8,518	8,094	7,465	6,287	5,095	4,740	3,681
152 Woods Hole Ocngrphic Inst	9,825e	9,391	10,548	9,300	5,822	5,009	4,572	5,689
153 Vanderbilt University	9,738	8,315	9,067	15,945	12,246	10,446	9,471	8,111
154 The Medical Col of Penna	9,685	6,939	9,028	6,257	3,632	3,486i	3,340i	3,194
155 Univ of Southwestern LA	9,303	7,445	5,999	4,229	4,428	4,177i	3,926	2,140i
156 Memphis State University	9,046	9,407	7,593	6,554	5,864	4,407	3,422	1,309
157 Tenn Technological Univ	8,939	8,345	6,796	6,752	6,259	4,277i	2,295	1,024e
158 Univ of North Texas	8,638	7,767	6,308	4,210	2,702	2,283	1,383	2,446
159 Tufts University	8,635	8,719	9,653	12,272	9,349	8,093i	6,833i	5,573i
160 SUNY at Albany	8,376	7,537	9,069	6,030	5,796	4,771	3,788	3,834
Total, 1st 160 insts.	6,889,944	6,245,761	5,611,992	4,903,209	4,469,669	3,918,430	3,368,539	2,962,643
161 Ohio University	8,257	8,842	7,739	7,323	5,720	5,198	3,516	2,911
162 Desert Research Institute	8,153	8,085	7,037	6,710	6,360	5,610	4,705	4,107
163 Loyola Univ - Chicago	7,999	6,057	5,252	3,880	3,319	3,072	2,488	2,103
164 University of Mississippi	7,811	7,098	6,251	5,808	5,130	5,184	2,607	2,808
165 Rice University	7,739	6,270	5,223	4,551	4,143i	3,735i	3,327	2,985i
166 University of Notre Dame	7,715	6,506	6,176	4,266	4,010	3,597	3,477	2,766
167 South Dakota State Univ	7,409	5,845	5,218	5,279	5,257	4,616	5,794	3,415
168 Univ Alabama Huntsville	7,136	8,210	8,185	6,630	3,610	2,842	2,018	1,490
169 North Dakota State Univ	6,939	6,051	5,141	4,428	16,638	15,567	14,825i	14,085i
170 University of Oregon	6,840	6,195	5,190	3,994	4,032	3,284	3,022	2,891
Total, 1st 170 insts.	6,965,942	6,314,920	5,673,404	4,956,078	4,527,888	3,971,135	3,414,318	3,002,204
171 University of Dayton	6,793	7,133	5,334	5,382	4,735	3,847	3,733	3,340
172 SUNY at Binghamton	6,740	6,978	6,356	6,194	5,768	4,981	3,936	3,028
173 Wright State University	6,599	6,025	5,329	4,539	3,565	5,435	5,307	4,302
174 Colorado School of Mines	6,484	5,633	4,929	3,835	3,369	3,089	2,508	2,398
175 Inst Paper Sci and Tech	6,479	4,796	4,849	4,733	4,308	4,341	4,063	4,023
176 U of Arkansas Med Sci Cam	6,443	5,244	5,576	4,005	3,533	3,040	2,098	1,400
177 George Washington Univ	6,076	5,555	5,064	3,634	4,178	3,348i	2,518	2,484
178 Northeastern University	6,012i	4,130	3,101	2,928	2,036	1,724	1,908	1,783i
179 University of Lowell	5,862	6,629	5,268	5,295	3,277	2,357	2,102	1,921
180 Georgia State University	5,755	5,321	4,493	3,503	3,152	1,739	995	1,144
Total, 1st 180 insts.	7,029,185	6,372,364	5,723,703	5,000,126	4,565,809	4,005,036	3,443,486	3,028,027
181 Univ of Texas at Dallas	5,749	6,187	4,453	3,827	2,827	1,918	1,891	2,224
182 Creighton University	5,744	6,524	5,548	5,822	4,390i	2,958i	1,526	1,354
183 Cleveland State Univ	5,677	5,004	4,810	5,287	4,878	2,880	2,290	1,297
184 Brigham Young University	5,600	6,251	6,759	5,307	6,321	5,958i	5,595	4,892
185 Hahnemann University	5,499i	5,351	3,349	1,733	2,270	1,600	3,290	2,314
186 Northern Illinois Univ	5,457	5,679	4,356	3,545	3,002	3,172	2,992i	2,810i
187 Union College (NY)	5,404	4,515	4,715	4,923	3,329i	1,735i	141	158
188 Stevens Institute of Tech	5,187	3,186	2,441	3,588	4,815	3,821i	2,828i	1,835
189 Univ of Missouri Kan City	5,177	5,543	5,535	6,145	3,978	3,167	2,071	1,439
190 Western Michigan Univ	5,166	3,672	2,615i	1,558	1,040	1,294	626	233
Total, 1st 190 insts.	7,083,845	6,424,276	5,768,284	5,041,861	4,602,659	4,033,539	3,466,736	3,046,583
191 Univ of South Alabama	5,126	3,868	3,537	3,305	2,953	2,708	2,825	1,971
192 Howard University	4,977	4,315	4,979i	5,643i	6,307	6,047e	1,077	1,936
193 Clarkson University	4,896	4,551	3,164	2,663	2,189	2,299	1,316	1,109
194 Florida Inst of Tech	4,665	5,752	2,633	1,953	1,341	1,230	1,379	1,061
195 George Mason University	4,425	5,517	3,049	2,354	1,797e	1,281i	764i	247
196 CUNY City College	4,231	2,419	2,719	2,321	1,527	1,451i	1,375	822
197 Oregon Grad Inst Sci/Tech	4,198	2,425	2,243	1,957	1,929	1,891i	1,853i	1,815
198 University of Montana	4,179	3,864	3,711	3,917e	3,760	3,141i	2,521e	2,365i
199 San Jose State University	4,122	2,716	2,268	4,160	3,737i	3,314i	2,891i	2,468i
200 University of Tulsa	4,054	3,280	2,403	2,422	2,029i	1,635i	1,241	1,319
Total, 1st 200 insts.	7,128,718	6,462,991	5,798,990	5,072,556	4,630,228	4,058,536	3,483,978	3,061,696
Total, all other sampled insts.	195,049	176,966	164,209	202,088	182,320	159,044	139,024	128,420
Estimated total non-sampled insts.	75,937	68,598	61,441	0	0	0	0	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-35. R&D expenditures at universities and colleges, by source of funds: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Federal Govt.	State & local govts.	Industry	Institutional funds	Other
Total, all institutions	17,620,209	10,220,505	1,482,642	1,215,805	3,368,518	1,332,740
1 Johns Hopkins Univ	710,095	641,239	1,426	14,953	28,823	23,654
2 University of Michigan	363,582	206,276	2,881	30,807	94,361	29,257
3 University of Minnesota	331,471	164,887	53,614	19,270	60,904	32,796
4 Univ of Wis-Madison	326,489	183,652	57,110	12,624	46,833	26,270
5 Mass Inst of Technology	318,901	237,667	3,254	45,712	8,827	23,441
6 Stanford University	310,429	242,340	798	11,935	37,142	18,214
7 Cornell University	309,535	173,478	40,548	16,761	55,491	23,257
8 Texas A & M University	288,005	97,727	77,963	23,050	78,059	11,206
9 University of Washington	274,423	221,124	5,879	26,033	17,577	3,810
10 Univ of Cal San Francisco	268,700	190,936	13,257	5,475	32,739	26,293
Total, 1st 10 insts.	3,501,630	2,359,326	256,730	206,620	460,756	218,198
11 Pennsylvania State Univ	267,816	146,212	8,807	37,587	75,130	80
12 Univ of Cal San Diego	261,422	200,451	8,434	11,225	22,948	18,364
13 Univ of Cal Berkeley	258,038	140,261	23,848	11,970	66,198	15,761
14 Univ of Cal Los Angeles	250,033	167,885	5,007	8,619	36,496	32,026
15 University of Ill Urbana	243,380	118,748	33,687	24,434	58,097	8,414
16 Univ of Texas at Austin	237,043	113,192	8,804	5,734	75,225	34,088
17 Harvard University	229,939	156,014	460	11,957	18,746e	42,762e
18 University of Arizona	213,726	101,818	6,194	12,091	78,768	14,855
19 Univ of MD College Park	206,432	77,866	60,198	11,938	56,430	0
20 Univ of Cal Davis	200,664	79,961	12,328	6,599	88,499	13,277
Total, 1st 20 insts.	5,870,123	3,661,734	424,497	348,774	1,037,293	397,825
21 Univ of Pennsylvania	198,221	144,451	3,793	7,171	15,633	27,173
22 Ohio State University	194,919	88,542	32,880	15,409	26,514	31,574
23 Columbia Univ Main Div	194,666	163,561	2,998	6,619	5,130	16,358
24 Yale University	193,893	149,506	743	8,700	15,132	19,812
25 Georgia Institute of Tech	176,729	101,476	1,767	22,496	50,990	0
26 Univ of Southern Cal	175,595	132,230	6,089	13,852	23,424	0
27 Duke University	164,232	114,879	2,219	22,876	12,629	11,629
28 University of Georgia	162,992	45,019	37,536	5,821	73,488	1,128
29 Univ. of Colorado	161,970	119,068	1,917	8,251	16,482	16,252
30 Baylor Col of Medicine	161,084	78,752	3,585	7,294	21,270	50,183
Total, 1st 30 insts.	7,654,424	4,799,218	518,024	467,263	1,297,985	571,934
31 Washington University	160,464	112,475	3,851	16,442	12,980	14,716
32 Louisiana State Univ Sys	151,433	57,033	56,158	8,477	22,652	7,113
33 Rutgers the St Univ of NJ	151,335	48,622	24,997	7,769	61,045	8,702
34 Northwestern University	144,809	62,718	3,006	6,960	55,546	16,579
35 Univ of NC at Chapel Hill	142,681	103,485	18,401	3,677	17,118	0
36 N C State Univ at Raleigh	142,606	46,894	50,107	20,961	20,106	4,538
37 University of Florida	140,257	66,777	12,453	13,376	41,651	6,000
38 Purdue University	136,325	67,810	17,990	11,962	31,701	6,862
39 Iowa St U of Sci & Tech	134,657	42,793	31,127	6,537	48,985	5,215
40 Michigan State University	133,249	61,646	25,338	4,693	31,599	9,973
Total, 1st 40 insts.	9,092,240	5,469,671	761,452	568,117	1,641,368	651,632
41 University of Rochester	131,777	106,874	6,896	6,814	1,388	9,805
42 University of Pittsburgh	130,322	99,932	1,190	7,110	8,854	13,236
43 Univ. Of Tennessee System	128,418	63,575	25,040	8,857	23,868	7,078
44 VA Polytech Inst & St U	125,256	47,866	38,655	12,443	22,497	3,795
45 University of Iowa	124,058	81,007	2,674	7,828	25,316	7,233
46 Univ of Massachusetts	119,657	67,665	6,764	10,271	29,251	5,706
47 University of Connecticut	119,526	46,156	4,972	7,421	53,190	7,787
48 University of Chicago	117,344	93,993	1,828	1,425	10,084	10,014
49 California Inst of Tech	115,526	100,820	337	2,764	7,101	4,504
50 SUNY at Buffalo	113,441	68,945	4,305	3,086	20,946	16,159
Total, 1st 50 insts.	10,317,565	6,246,504	854,113	636,136	1,843,863	736,949

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-35. R&D expenditures at universities and colleges, by source of funds: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Federal Govt.	State & local govts.	Industry	Institu-tional funds	Other
51 Univ Alabama Birmingham	113,317	76,317	2,585	7,867	11,134	15,414
52 New York University	112,106	81,896	1,398	5,[illegible]47	8,703	14,162
53 UT MD Anderson Cancer Ctr	108,988	32,314	0	0	55,933	20,741
54 Case Western Reserve Univ	104,199	76,390	3,024	4,667	9,087	11,031
55 Carnegie-Mellon Univ	103,030	65,290	5,665	20,438	2,357	9,280
56 Indiana University	102,461	61,831	1,339	2,367	26,587	10,337
57 University of Miami	96,979	69,847	1,810	6,593	4,434	14,295
58 Univ of Missouri Columbia	96,748	27,463	12,915	9,537	41,549	5,284
59 University of Virginia	96,733	61,060	6,597	8,153	10,341	10,582
60 Oregon State University	96,199	51,099	24,165	3,776	8,238	8,921
Total, 1st 60 insts.	11,348,325	6,850,011	913,611	705,481	2,022,226	856,996
61 University of Utah	94,621	68,769	2,961	2,908	15,621	4,362
62 UT SW Medical Ctr-Dallas	94,511	57,746	48	9,330	6,235	21,152
63 Utah State University	94,167	61,762	13,086	2,155	15,265	1,899
64 Princeton University	92,002	52,335	1,626	4,595	24,939	8,507
65 Emory University	91,940	60,586	3,491	6,920	13,521	7,422
66 SUNY at Stony Brook	90,790	58,977	1,903	2,783	20,828	6,299
67 Univ of Ill Chicago	90,520	43,096	3,981	4,844	29,022	9,577
68 Univ of MD Balt Prof Sch	89,811	43,682	16,136	11,898	11,141	6,954
69 Univ of Nebraska-Lincoln	87,529	27,499	32,834	2,806	21,899	2,491
70 Yeshiva University	86,721	67,831	0	1,601	10,888	6,401
Total, 1st 70 insts.	12,260,937	7,392,294	989,677	755,321	2,191,585	932,060
71 Univ of Cal Irvine	82,523	52,652	3,485	4,163	12,837	9,386
72 University of Kentucky	81,137	31,636	5,979	7,476	31,142	4,904
73 Vanderbilt University	80,759	71,021	205	1,941	2,795	4,797
74 University of Cincinnati	80,598	47,445	2,951	4,050	18,126	8,026
75 Colorado State University	80,474	55,689	9,537	3,380	7,835	4,033
76 University of Oklahoma	79,777	25,786	7,879	3,530	30,439	12,143
77 New Mexico State Univ	78,736	57,522	8,947	4,939	6,668	660
78 Univ of Hawaii-Manoa	78,166	44,857	27,321	856	3,391	1,741
79 Woods Hole Ocngrphic Inst	76,979e	67,154e	763e	786e	2,280e	5,996e
80 Washington State Univ	75,244	32,257	5,472	2,074	27,652	7,789
Total, 1st 80 insts.	13,055,330	7,878,313	1,062,216	788,516	2,334,750	991,535
81 Boston University	74,881	60,166	192	6,405	0	8,118
82 Rockefeller University	74,090	36,759	54	4,816	16,339	16,122
83 Univ of Med & Dent of N J	73,449	38,768	8,441	3,471	16,374	6,395
84 Univ of South Florida	72,948	23,578	4,957	6,091	32,387	5,935
85 Tulane University	71,781	36,713	1,970	6,758	19,557	6,783
86 Clemson University	70,236	16,594	15,267	6,163	29,012	3,200
87 Wayne State University	69,997	30,583	5,583	7,295	20,836	5,700
88 Auburn University	69,913	15,279	21,689	6,450	21,493	5,002
89 Oklahoma State University	67,492	15,756	4,871	2,473	43,174	1,218
90 Univ of Alaska Fairbanks	67,432	34,335	1,926	1,547	26,246	1,378
Total, 1st 90 insts.	13,767,549	8,186,844	1,127,166	839,985	2,562,168	1,051,386
91 University of New Mexico	67,344	30,141	4,579	4,684	16,889	11,051
92 CUNY Mt Sinai Sch of Med	66,310	42,035	1,027	3,978	6,984	12,286
93 University of Kansas	65,982	26,419	2,436	4,228	31,040	1,859
94 Virginia Commonwlth Univ	65,608	44,974	2,475	6,201	10,273	1,685
95 Mississippi State Univ	64,335	25,751	20,771	7,163	6,975	3,675
96 Arizona State University	63,489	26,246	1,235	6,860	27,994	1,154
97 Georgetown University	60,454	41,597	121	4,549	8,693	5,494
98 Univ of Cal Santa Barbara	59,593	46,647	1,292	2,379	5,698	3,577
99 Univ of Cal Riverside	57,244	16,031	2,834	1,361	34,007	3,011
100 Univ of South Carolina	55,091	23,084	1,591	7,625	20,740	2,051
Total, 1st 100 insts.	14,392,999	8,509,769	1,165,527	889,013	2,731,461	1,097,229

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-35. R&D expenditures at universities and colleges, by source of funds: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Federal Govt.	State & local govts.	Industry	Institu-tional funds	Other
101 Temple University	54,921	28,873	731	3,452	17,661	4,204
102 U Tex Hlth Sci Ctr Houstn	53,896	32,778	1,997	6,392	6,077	6,652
103 Florida State University	53,811	28,495	3,478	1,408	18,054	2,376
104 Kans St U - Ag & App Sci	53,010	15,726	24,677	2,389	8,422	1,796
105 U Tex Hlth Sci Ctr S Anto	51,768	32,770	3,148	6,876	6,165	2,809
106 Rensselaer Polytech Inst	50,106	23,372	4,121	12,236	3,701	6,676
107 West Virginia University	49,686	19,582	1,564	11,163	13,009	4,368
108 Brown University	49,503	35,571	173	2,497	9,050	2,212
109 Dartmouth College	49,384	34,317	3,369	2,719	4,943	4,036
110 Tufts University	47,748	39,113	55	7,740e	818e	22e
Total, 1st 110 insts.	14,906,832	8,800,366	1,208,840	945,885	2,819,361	1,132,380
111 Unif Serv Univ of Hlth Sc	47,096	12,846	0	0	34,250	0
112 U of VT & State Agr Coll	46,541	30,860	2,859	4,181	6,395	2,246
113 U Tex Med Brnch Galveston	45,086	20,974	6,109	2,652	9,257	6,094
114 University of Delaware	44,696	20,053	4,024	4,732	12,724	3,163
115 Wake Forest University	44,214	33,385	199	5,927	1,861	2,842
116 U of Houston	42,292	20,140	10,830	1,608	6,710	3,004
117 Univ of Central Florida	41,935	10,406	7,937	4,287	19,305	0
118 Oregon Hlth Sciences Univ	41,661	28,897	0	1,099	6,056	5,609
119 Univ of Ark Fayetteville	40,831	12,371	13,382	3,323	10,154	1,601
120 Medical College of Wis	40,446	25,062	858	4,175	3,560	6,791
Total, 1st 120 insts.	15,341,630	9,015,360	1,255,038	977,869	2,929,633	1,163,730
121 University of Idaho	39,407	15,149	8,564	4,447	11,095	152
122 Univ of Rhode Island	38,842	23,980	5,105	1,212	8,432	113
123 University of Dayton	37,925	31,132	445	4,359	1,916	73
124 SUNY Hlth Sci Ctr - Syrcs	37,294	10,667	99	350	0	26,178
125 Texas Tech University	34,994	9,323	12,062	4,763	7,515	1,331
126 Brandeis University	33,837	21,280	270	0	4,676	7,611
127 Thomas Jefferson Univ	33,066	23,100	0	9,966	0	0
128 SUNY Hlth Sci Ctr - Brkln	32,824	17,949	3,597	732	2,960	7,586
129 Univ of P R-Mayaguez	31,938i	14,613i	7,839i	312i	7,195i	1,979i
130 Univ of Cal Santa Cruz	31,620	15,605	1,292	560	12,171	1,792
Total, 1st 130 insts.	15,693,377	9,198,358	1,294,311	1,004,570	2,985,593	1,210,545
131 Syracuse University	30,606	14,192	2,513	4,405	5,887	3,609
132 Rice University	30,577	22,838	2,589	3,600	0	1,550
133 Montana State University	30,278	10,109	8,113	4,043	8,013	0
134 George Washington Univ	29,791	23,715	242	1,248	1,315	3,271
135 Univ of New Hampshire	29,591	18,516	1,006	1,278	5,282	3,509
136 Univ of Nevada - Reno	29,303	10,858	829	1,276	15,778	562
137 San Diego State Univ	28,570	16,744	4,008	1,980	5,025	813
138 Southern Ill U-Carbondale	28,340	7,092	6,931	2,190	10,497	1,630
139 Lehigh University	27,912	11,870	2,500	8,133	4,556	853
140 U of Neb Med Ctr at Omaha	27,858	10,518	2,679	1,682	10,798	2,181
Total, 1st 140 insts.	15,986,203	9,344,810	1,325,721	1,034,405	3,052,744	1,228,523
141 Univ Alabama Huntsville	27,499	20,363	1,248	1,847	4,041	0
142 Rush University	27,359	7,010	987	4,092	9,748	5,522
143 Univ of Maine Orono	27,082	10,062	2,197	4,719	9,504	600
144 University of Oregon	26,151	19,311	336	224	5,200	1,080
145 Med Univ of S. Carolina	25,877	14,367	0	2,115	4,259	5,136
146 University of Mississippi	24,748	16,937	74	1,366	4,428	1,943
147 The Medical Col of Penna	24,645	14,960	1,869	2,496	4,254	1,066
148 University of Wyoming	23,009	12,782	1,848	2,000	6,140	239
149 Loyola Univ - Chicago	22,702	14,703	226	1,545	2,254	3,974
150 University of Notre Dame	21,302	13,587	754	4,952	2,009	0
Total, 1st 150 insts.	16,236,577	9,488,892	1,335,260	1,059,761	3,104,581	1,248,083

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-35. R&D expenditures at universities and colleges, by source of funds: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Federal Govt.	State & local govts.	Industry	Institutional funds	Other
151 The University of Alabama	21,248	5,427	172	2,396	13,016	237
152 SUNY at Albany	20,580	12,204	6	876	6,614	880
153 Drexel University	19,705	7,559	1,275	2,873	7,998	0
154 Michigan Tech University	19,667	6,870	3,844	4,150	4,803	0
155 Univ of Nevada, Las Vegas	19,491	17,568	517	377	883	146
156 US Naval Postgrad School	19,397	19,264	0	0	0	133
157 St Louis University	19,183	16,358	331	1,058	110	1,326
158 SUNY Col of Env Sci & For	19,049	2,126	762	1,707	13,615	839
159 Florida A & M University	18,552	15,592	2,818	142	0	0
160 College of William & Mary	18,508	7,283	993	526	8,938	768
Total, 1st 160 insts.	16,431,957	9,599,143	1,345,978	1,073,866	3,160,558	1,252,412
161 Desert Research Institute	17,948	9,795	1,262	3,670	3,014	207
162 University of N Dakota	16,995	14,470	134	853	1,325	213
163 Univ of Wis-Milwaukee	16,865	6,808	6,390	499	1,821	1,347
164 University of Louisville	16,852	6,750	143	3,093	6,866	0
165 N Mex Inst Mining & Tech	16,770e	5,718i	1,038i	6,512i	3,136i	366i
166 N J Inst of Technology	16,463	4,080	6,149	2,018	2,727	1,489
167 U of MD Center For EES	16,205	2,857	2,909	83	9,076	1,280
168 Northeastern University	15,973	9,961i	522i	2,491i	350i	2,649i
169 Howard University	15,731	10,754	95	312	2,396	2,174
170 CUNY City College	15,451	11,220	789	1,032	0	2,410
Total, 1st 170 insts.	16,597,210	9,681,556	1,365,409	1,094,429	3,191,269	1,264,547
171 Wright State University	14,646	8,047	1,020	562	3,297	1,720
172 New York Medical College	14,633	11,056	146	1,981	0	1,450
173 Univ of Missouri Rolla	14,432	4,360	734	1,564	6,212	1,562
174 U of Arkansas Med Sci Cam	14,250	7,807	576	1,191	2,791	1,885
175 North Dakota State Univ	13,821	6,882	893	1,455	3,415	1,176
176 Hahnemann University	13,536i	8,037i	346i	238i	1,637i	3,278i
177 University of Akron	13,405	3,411	3,555	3,813	2,626	0
178 Colorado School of Mines	12,971	6,487	1,451	4,847	186	0
179 Univ of South Alabama	12,924	7,798	562	1,788	2,776	0
180 Univ of Tex at Arlington	12,887	2,741	1,437	2,884	5,825	0
Total, 1st 180 insts.	16,734,715	9,748,182	1,376,129	1,114,752	3,220,034	1,275,618
181 Ohio University	12,796	4,539	3,423	839	3,589	406
182 Brigham Young University	12,682	7,082	709	1,817	2,893	181
183 University of Lowell	12,403	6,541	710	3,599	0	1,553
184 San Jose State University	12,100	7,978	1,969	588	989	576
185 Medical Col of Georgia	12,082	8,081	138	1,731	743	1,389
186 Memphis State University	12,000	2,954	3,077	616	4,883	470
187 South Dakota State Univ	11,511	4,102	5,488	250	1,089	582
188 Oregon Grad Inst Sci/Tech	11,160	6,962	603	1,673	1,395	527
189 Eastern VA Medical School	11,112	7,093	0	0	0	4,019
190 Univ of North Texas	10,580	1,942	4,197	3,576	865	0
Total, 1st 190 insts.	16,853,141	9,805,456	1,396,443	1,129,441	3,236,480	1,285,321
191 Univ of Texas at Dallas	10,571	4,822	1,403	2,403	1,943	0
192 NC Ag & Tech State Univ	10,427	8,205	275	366	743	838
193 Univ of Southwestern LA	10,232	929	2,619	0	5,611	1,073
194 Cleveland State Univ	10,205	4,528	2,114	753	2,810	0
195 Albany Medical College	10,131	6,291	0	677	1,637	1,526
196 Northern Illinois Univ	10,074	4,617	395	1,629	3,433	0
197 Old Dominion U Res Fdn	10,040	6,576	2,485	979	0	0
198 Tenn Technological Univ	9,888	949	4,581	871	3,107	380
199 SUNY at Binghamton	9,870	3,130	1,337	1,761	2,665	977
200 Boston College	9,810	8,673	2	134	337	664
Total, 1st 200 insts.	16,954,389	9,854,176	1,411,654	1,139,014	3,258,766	1,290,779
Total, all other sampled insts.	525,542	301,988	48,935	61,687	82,363	30,569
Estimated total non-sampled insts.	140,278	64,341	22,053	15,104	27,389	11,392

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-36. R&D expenditures at public universities and colleges, by source of funds: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Federal Govt.	State & local govts.	Industry	Institu-tional funds	Other
Total, all institutions	11,779,032	6,046,980	1,338,844	798,832	2,792,319	802,057
1 University of Michigan	363,582	206,276	2,881	30,807	94,361	29,257
2 University of Minnesota	331,471	164,887	53,614	19,270	60,904	32,796
3 Univ of Wis-Madison	326,489	183,652	57,110	12,624	46,833	26,270
4 Texas A & M University	288,005	97,727	77,963	23,050	78,059	11,206
5 University of Washington	274,423	221,124	5,879	26,033	17,577	3,810
6 Univ of Cal San Francisco	268,700	190,936	13,257	5,475	32,739	26,293
7 Pennsylvania State Univ	267,816	146,212	8,807	37,587	75,130	80
8 Univ of Cal San Diego	261,422	200,451	8,434	11,225	22,948	18,364
9 Univ of Cal Berkeley	258,038	140,261	23,848	11,970	66,198	15,761
10 Univ of Cal Los Angeles	250,033	167,885	5,007	8,619	36,496	32,026
Total, 1st 10 insts.	2,889,979	1,719,411	256,800	186,660	531,245	195,863
11 University of Ill Urbana	243,380	118,748	33,687	24,434	58,097	8,414
12 Univ of Texas at Austin	237,043	113,192	8,804	5,734	75,225	34,088
13 University of Arizona	213,726	101,818	6,194	12,091	78,768	14,855
14 Univ of MD College Park	206,432	77,866	60,198	11,938	56,430	0
15 Univ of Cal Davis	200,664	79,961	12,328	6,599	88,499	13,277
16 Ohio State University	194,919	88,542	32,880	15,409	26,514	31,574
17 Georgia Institute of Tech	176,729	101,476	1,767	22,496	50,990	0
18 University of Georgia	162,992	45,019	37,536	5,821	73,488	1,128
19 Univ. of Colorado	161,970	119,068	1,917	8,251	16,482	16,252
20 Louisiana State Univ Sys	151,433	57,033	56,158	8,477	22,652	7,113
Total, 1st 20 insts.	4,839,267	2,622,134	508,269	307,910	1,078,390	322,564
21 Rutgers the St Univ of NJ	151,335	48,822	24,997	7,769	61,045	8,702
22 Univ of NC at Chapel Hill	142,681	103,485	18,401	3,677	17,118	0
23 N C State Univ at Raleigh	142,606	46,894	50,107	20,961	20,106	4,538
24 University of Florida	140,257	66,777	12,453	13,376	41,651	6,000
25 Purdue University	136,325	67,810	17,990	11,962	31,701	6,862
26 Iowa St U of Sci & Tech	134,657	42,793	31,127	6,537	48,985	5,215
27 Michigan State University	133,249	61,646	25,338	4,693	31,599	9,973
28 University of Pittsburgh	130,322	99,932	1,190	7,110	8,654	13,236
29 Univ. Of Tennessee System	128,418	63,575	25,040	8,857	23,868	7,078
30 VA Polytech Inst & St U	125,256	47,866	38,655	12,443	22,497	3,795
Total, 1st 30 insts.	6,204,373	3,271,734	753,567	405,295	1,385,814	387,963
31 University of Iowa	124,058	81,007	2,674	7,828	25,316	7,233
32 Univ of Massachusetts	119,657	67,665	6,764	10,271	29,251	5,706
33 University of Connecticut	119,526	46,156	4,972	7,421	53,190	7,787
34 SUNY at Buffalo	113,441	68,945	4,305	3,066	20,946	16,159
35 Univ Alabama Birmingham	113,317	76,317	2,585	7,867	11,134	15,414
36 UT MD Anderson Cancer Ctr	108,988	32,314	0	0	55,933	20,741
37 Indiana University	102,461	61,831	1,339	2,367	26,587	10,337
38 Univ of Missouri Columbia	96,748	27,463	12,915	9,537	41,549	5,284
39 University of Virginia	96,733	61,060	6,597	8,153	10,341	10,582
40 Oregon State University	96,199	51,099	24,165	3,776	8,238	8,921
Total, 1st 40 insts.	7,295,501	3,845,591	819,883	465,601	1,668,299	496,127
41 University of Utah	94,621	68,769	2,961	2,908	15,621	4,362
42 UT SW Medical Ctr-Dallas	94,511	57,746	48	9,330	6,235	21,152
43 Utah State University	94,167	61,762	13,086	2,155	15,265	1,899
44 SUNY at Stony Brook	90,790	58,977	1,903	2,783	20,828	6,299
45 Univ of Ill Chicago	90,520	43,096	3,981	4,844	29,022	9,577
46 Univ of MD Balt Prof Sch	89,811	43,682	16,136	11,898	11,141	6,954
47 Univ of Nebraska-Lincoln	87,529	27,499	32,834	2,806	21,899	2,491
48 Univ of Cal Irvine	82,523	52,652	3,485	4,163	12,837	9,386
49 University of Kentucky	81,137	31,636	5,979	7,476	31,142	4,904
50 University of Cincinnati	80,598	47,445	2,951	4,050	18,126	8,026
Total, 1st 50 insts.	8,181,708	4,338,855	903,247	518,014	1,850,415	571,177

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-36. R&D expenditures at public universities and colleges, by source of funds: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Federal Govt.	State & local govts.	Industry	Institutional funds	Other
51 Colorado State University	80,474	55,689	9,537	3,380	7,835	4,033
52 University of Oklahoma	79,777	25,786	7,879	3,530	30,439	[illegible],143
53 New Mexico State Univ	78,736	57,522	8,947	4,939	6,668	660
54 Univ of Hawaii-Manoa	78,166	44,857	27,321	856	3,391	1,741
55 Washington State Univ	75,244	32,257	5,472	2,074	27,652	7,789
56 Univ of Med & Dent of N J	73,449	38,768	8,441	3,471	16,374	6,395
57 Univ of South Florida	72,948	23,578	4,957	6,091	32,387	5,935
58 Clemson University	70,236	16,594	15,267	6,163	29,012	3,200
59 Wayne State University	69,997	30,583	5,583	7,295	20,836	5,700
60 Auburn University	69,913	15,279	21,689	6,450	21,493	5,002
Total, 1st 60 insts.	8,930,648	4,679,768	1,018,340	562,263	2,046,502	623,775
61 Oklahoma State University	67,492	15,756	4,871	2,473	43,174	1,218
62 Univ of Alaska Fairbanks	67,432	34,335	1,926	1,547	28,246	1,378
63 University of New Mexico	67,344	30,141	4,579	4,684	16,889	11,051
64 University of Kansas	65,982	26,419	2,436	4,228	31,040	1,859
65 Virginia Commonwlth Univ	65,608	44,974	2,475	6,201	10,273	1,685
66 Mississippi State Univ	64,335	25,751	20,771	7,163	6,975	3,675
67 Arizona State University	63,489	26,246	1,235	6,860	27,994	1,154
68 Univ of Cal Santa Barbara	59,593	46,647	1,292	2,379	5,698	3,577
69 Univ of Cal Riverside	57,244	16,031	2,834	1,361	34,007	3,011
70 Univ of South Carolina	55,091	23,084	1,591	7,625	20,740	2,051
Total, 1st 70 insts.	9,564,258	4,969,152	1,062,350	606,784	2,271,538	654,434
71 Temple University	54,921	28,873	731	3,452	17,661	4,204
72 U Tex Hlth Sci Ctr Houstn	53,896	32,778	1,997	6,392	6,077	6,652
73 Florida State University	53,811	28,495	3,478	1,408	18,054	2,376
74 Kans St U - Ag & App Sci	53,010	15,726	24,677	2,389	8,422	1,796
75 U Tex Hlth Sci Ctr S Anto	51,768	32,770	3,148	6,876	6,165	2,809
76 West Virginia University	49,686	19,582	1,564	11,163	13,009	4,368
77 Unif Serv Univ of Hlth Sc	47,096	12,846	0	0	34,250	0
78 U of VT & State Agr Coll	46,541	30,860	2,859	4,181	6,395	2,246
79 U Tex Med Brnch Galveston	45,086	20,974	6,109	2,652	9,257	6,094
80 University of Delaware	44,696	20,053	4,024	4,732	12,724	3,163
Total, 1st 80 insts.	10,064,769	5,212,109	1,110,937	650,029	2,403,572	688,142
81 U of Houston	42,292	20,140	10,830	1,608	6,710	3,004
82 Univ of Central Florida	41,935	10,406	7,937	4,287	19,305	0
83 Oregon Hlth Sciences Univ	41,661	28,897	0	1,099	6,056	5,609
84 Univ of Ark Fayetteville	40,831	12,371	13,382	3,323	10,154	1,601
85 University of Idaho	39,407	15,149	8,564	4,447	11,095	152
86 Univ of Rhode Island	38,842	23,980	5,105	1,212	8,432	113
87 SUNY Hlth Sci Ctr - Syrcs	37,294	10,667	99	350	0	26,178
88 Texas Tech University	34,994	9,323	12,062	4,763	7,515	1,331
89 SUNY Hlth Sci Ctr - Brkln	32,824	17,949	3,597	732	2,960	7,586
90 Univ of P R-Mayaguez	31,938i	14,613i	7,839i	312i	7,195i	1,979i
Total, 1st 90 insts.	10,446,787	5,375,604	1,180,352	672,162	2,482,974	735,695
91 Univ of Cal Santa Cruz	31,620	15,805	1,292	560	12,171	1,792
92 Montana State University	30,278	10,109	8,113	4,043	8,013	0
93 Univ of New Hampshire	29,591	18,516	1,006	1,278	5,282	3,509
94 Univ of Nevada - Reno	29,303	10,858	829	1,276	15,778	562
95 San Diego State Univ	28,570	16,744	4,008	1,980	5,025	813
96 Southern Ill U-Carbondale	28,340	7,092	[illegible]	2,190	10,497	1,630
97 U of Neb Med Ctr at Omaha	27,858	10,518	[illegible]	1,682	10,798	2,181
98 Univ Alabama Huntsville	27,499	20,363	[illegible]	1,847	4,041	0
99 Univ of Maine Orono	27,082	10,062	[illegible]	4,719	9,504	600
100 University of Oregon	26,151	19,311	336	224	5,200	1,080
Total, 1st 100 insts.	10,733,079	5,514,982	1,208,991	691,961	2,569,283	747,862

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-36. R&D expenditures at public universities and colleges, by source of funds: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Federal Govt.	State & local govts.	Industry	Institutional funds	Other
101 Med Univ of S. Carolina	25,877	14,367	0	2,115	4,259	5,136
102 University of Mississippi	24,748	16,937	74	1,366	4,428	1,943
103 University of Wyoming	23,009	12,782	1,848	2,000	6,140	239
104 The University of Alabama	21,248	5,427	172	2,396	13,016	237
105 SUNY at Albany	20,580	12,204	6	876	6,614	880
106 Michigan Tech University	19,667	6,870	3,844	4,150	4,803	0
107 Univ of Nevada, Las Vegas	19,491	17,568	517	377	883	146
108 US Naval Postgrad School	19,397	19,264	0	0	0	133
109 SUNY Col of Env Sci & For	19,049	2,126	762	1,707	13,615	839
110 Florida A & M University	18,552	15,592	2,818	142	0	0
Total, 1st 110 insts.	10,944,697	5,638,119	1,219,032	707,090	2,623,041	757,415
111 College of William & Mary	18,506	7,283	993	526	8,938	768
112 Desert Research Institute	17,948	9,795	1,262	3,670	3,014	207
113 University of N Dakota	16,995	14,470	134	853	1,325	213
114 Univ of Wis-Milwaukee	16,865	6,808	6,390	499	1,821	1,347
115 University of Louisville	16,852	6,750	143	3,093	6,866	0
116 N Mex Inst Mining & Tech	16,770e	5,718i	1,038i	6,512i	3,136i	366i
117 N J Inst of Technology	16,463	4,080	6,149	2,018	2,727	1,489
118 U of MD Center For EES	16,205	2,857	2,909	83	9,076	1,280
119 CUNY City College	15,451	11,220	789	1,032	0	2,410
120 Wright State University	14,646	8,047	1,020	562	3,297	1,720
Total, 1st 120 insts.	11,111,400	5,715,147	1,239,859	725,938	2,663,241	767,215
121 Univ of Missouri Rolla	14,432	4,360	734	1,564	6,212	1,562
122 U of Arkansas Med Sci Cam	14,250	7,807	576	1,191	2,791	1,885
123 North Dakota State Univ	13,821	6,882	693	1,455	3,415	1,176
124 University of Akron	13,405	3,411	3,555	3,813	2,626	0
125 Colorado School of Mines	12,971	6,487	1,451	4,847	186	0
126 Univ of South Alabama	12,924	7,798	562	1,788	2,776	0
127 Univ of Tex at Arlington	12,887	2,741	1,437	2,884	5,825	0
128 Ohio University	12,796	4,539	3,423	839	3,589	406
129 University of Lowell	12,403	6,541	710	3,599	0	1,553
130 San Jose State University	12,100	7,978	1,969	588	989	576
Total, 1st 130 insts.	11,243,389	5,773,691	1,255,169	748,506	2,691,650	774,373
131 Medical Col of Georgia	12,082	8,081	138	1,731	743	1,389
132 Memphis State University	12,000	2,954	3,077	616	4,883	470
133 South Dakota State Univ	11,511	4,102	5,488	250	1,089	582
134 Univ of North Texas	10,580	1,942	4,197	3,576	865	0
135 Univ of Texas at Dallas	10,571	4,822	1,403	2,403	1,943	0
136 NC Ag & Tech State Univ	10,427	8,205	275	366	743	838
137 Univ of Southwestern LA	10,232	929	2,619	0	5,611	1,073
138 Cleveland State Univ	10,205	4,528	2,114	753	2,810	0
139 Northern Illinois Univ	10,074	4,617	395	1,629	3,433	0
140 Old Dominion U Res Fdn	10,040	6,576	2,485	979	0	0
Total, 1st 140 insts.	11,351,111	5,820,447	1,277,360	760,809	2,713,770	778,725
141 Tenn Technological Univ	9,888	949	4,581	871	3,107	380
142 SUNY at Binghamton	9,870	3,130	1,337	1,761	2,665	977
143 Univ of Texas at El Paso	9,447	6,972	1,569	725	181	0
144 Med Col of Ohio at Toledo	9,353	5,970	981	685	1,155	562
145 Georgia State University	9,271	3,516	190	596	3,929	1,040
146 George Mason University	8,469	4,044	1,522	1,000	39	1,864
147 Kent State University	8,469	5,171	848	125	2,147	178
148 Univ of Missouri Kan City	8,300	3,123	723	1,342	2,669	443
149 CUNY Hunter College	8,075	5,524	0	201	1,555	795
150 University of Montana	7,871	3,692	771	363	2,807	238
Total, 1st 150 insts.	11,440,124	5,862,538	1,289,882	768,478	2,734,024	785,202
Total, all other sampled insts.	229,307	135,863	28,162	18,746	36,793	9,743
Estimated total non-sampled insts.	109,601	48,579	20,800	11,608	21,502	7,112

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-37. R&D expenditures at private universities and colleges, by source of funds: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Federal Govt.	State & local govts.	Industry	Institutional funds	Other
Total, all institutions	5,841,177	4,173,524	143,798	416,973	576,199	530,683
1 Johns Hopkins Univ	710,095	641,239	1,426	14,953	28,823	23,654
2 Mass Inst of Technology	318,901	237,667	3,254	45,712	8,827	23,441
3 Stanford University	310,429	242,340	798	11,935	37,142	18,214
4 Cornell University	309,535	173,478	40,548	16,761	55,491	23,257
5 Harvard University	229,939	156,014	460	11,957	18,746e	42,762e
6 Univ of Pennsylvania	198,221	144,451	3,793	7,171	15,633	27,173
7 Columbia Univ Main Div	194,666	163,561	2,998	6,619	5,130	16,358
8 Yale University	193,893	149,506	743	8,700	15,132	19,812
9 Univ of Southern Cal	175,595	132,230	6,089	13,852	23,424	0
10 Duke University	164,232	114,879	2,219	22,876	12,629	11,629
Total, 1st 10 insts.	2,805,506	2,155,365	62,328	160,536	220,977	206,300
11 Baylor Col of Medicine	161,084	78,752	3,585	7,294	21,270	50,183
12 Washington University	160,464	112,475	3,851	16,442	12,980	14,716
13 Northwestern University	144,809	62,718	3,006	6,960	55,546	16,579
14 University of Rochester	131,777	106,874	6,896	6,814	1,388	9,805
15 University of Chicago	117,344	93,093	1,828	1,425	10,084	10,014
16 California Inst of Tech	115,526	100,820	337	2,764	7,101	4,504
17 New York University	112,106	81,896	1,398	5,947	8,703	14,162
18 Case Western Reserve Univ	104,199	76,390	3,024	4,667	9,087	11,031
19 Carnegie-Mellon Univ	103,030	65,290	5,665	20,438	2,357	9,280
20 University of Miami	96,979	69,847	1,810	6,593	4,434	14,295
Total, 1st 20 insts.	4,052,824	3,004,420	93,728	239,880	353,927	360,869
21 Princeton University	92,002	52,335	1,626	4,595	24,939	8,507
22 Emory University	91,940	60,586	3,491	6,920	13,521	7,422
23 Yeshiva University	86,721	67,831	0	1,601	10,888	6,401
24 Vanderbilt University	80,759	71,021	205	1,941	2,795	4,797
25 Woods Hole Ocngrphic Inst	76,979e	67,154e	763e	786e	2,280e	5,996e
26 Boston University	74,881	60,166	192	6,405	0	8,118
27 Rockefeller University	74,090	36,759	54	4,816	16,339	16,122
28 Tulane University	71,781	36,713	1,970	6,758	19,557	6,783
29 CUNY Mt Sinai Sch of Med	66,310	42,035	1,027	3,978	6,984	12,286
30 Georgetown University	60,454	41,597	121	4,549	8,693	5,494
Total, 1st 30 insts.	4,828,741	3,540,617	103,177	282,229	459,923	442,795
31 Rensselaer Polytech Inst	50,106	23,372	4,121	12,236	3,701	6,676
32 Brown University	49,503	35,571	173	2,497	9,050	2,212
33 Dartmouth College	49,384	34,317	3,369	2,719	4,943	4,036
34 Tufts University	47,748	39,113	55	7,740e	818e	22e
35 Wake Forest University	44,214	33,385	199	5,927	1,861	2,842
36 Medical College of Wis	40,446	25,062	858	4,175	3,530	6,791
37 University of Dayton	37,925	31,132	445	4,359	1,916	73
38 Brandeis University	33,837	21,280	270	0	4,676	7,611
39 Thomas Jefferson Univ	33,066	23,100	0	9,966	0	0
40 Syracuse University	30,606	14,192	2,513	4,405	5,887	3,609
Total, 1st 40 insts.	5,245,576	3,821,141	115,180	336,253	496,335	476,667
41 Rice University	30,577	22,838	2,589	3,600	0	1,550
42 George Washington Univ	29,791	23,715	242	1,248	1,315	3,271
43 Lehigh University	27,912	11,870	2,500	8,133	4,556	853
44 Rush University	27,359	7,010	987	4,092	9,748	5,522
45 The Medical Col of Penna	24,645	14,960	1,869	2,496	4,254	1,066
46 Loyola Univ - Chicago	22,702	14,703	226	1,545	2,254	3,974
47 University of Notre Dame	21,302	13,587	754	4,952	2,009	0
48 Drexel University	19,705	7,559	1,275	2,873	7,998	0
49 St Louis University	19,183	16,358	331	1,058	110	1,326
50 Northeastern University	15,973	9,961 i	522 i	2,491 i	350 i	2,649 i
Total, 1st 50 insts.	5,484,725	3,963,702	126,475	368,741	528,929	496,878

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-37. R&D expenditures at private universities and colleges, by source of funds: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Federal Govt.	State & local govts.	Industry	Institu-tional funds	Other
51 Howard University	15,731	10,754	95	312	2,396	2,174
52 New York Medical College	14,633	11,056	146	1,981	0	1,450
53 Hahnemann University	13,536i	8,037i	346i	238i	1,637i	3,278i
54 Brigham Young University	12,682	7,082	709	1,817	2,893	181
55 Oregon Grad Inst Sci/Tech	11,160	6,962	603	1,673	1,395	527
56 Eastern VA Medical School	11,112	7,093	0	0	0	4,019
57 Albany Medical College	10,131	6,291	0	677	1,637	1,526
58 Boston College	9,810	8,673	2	134	337	664
59 Polytechnic University	9,272	5,600	1,110	1,972	500	90
60 Clarkson University	9,125	4,229	1,066	2,051	1,779	0
Total, 1st 60 insts.	5,601,917	4,039,479	130,552	379,596	541,503	510,787
61 Clark Atlanta University	8,655	6,538	0	374	1,743	0
62 Southern Methodist Univ	8,607	5,966	745	286	1,179	431
63 Creighton University	8,324	2,580	304	5,237	203	0
64 Stevens Institute of Tech	8,303	3,116	1,753	1,635	1,727	72
65 Mercer University	8,172	6,388	100	1,424	260	0
66 Inst Paper Sci and Tech	7,887	1,408	0	435	4,773	1,271
67 Catholic Univ of America	7,365	6,301	0	1,064	0	0
68 Meharry Medical College	7,249	7,014	0	56	37	142
69 Illinois Inst of Tech	7,128	4,114	620	1,660	734	0
70 Chas R Drew U of Med & Sc	7,043	5,311	718	129	355	530
Total, 1st 70 insts.	5,680,650	4,088,215	134,792	391,896	552,514	513,233
71 University of Denver	6,484	4,799i	128i	1,042i	515i	0i
72 Florida Inst of Tech	6,305	1,640	2,235	1,942	488	0
73 Morehouse School of Med	6,291	5,020i	0i	85i	328i	858i
74 Loma Linda University	6,191	2,529	71	2,508	921	162
75 Worcester Poly Institute	5,889	3,050	209	1,595	803	232
76 Union College (NY)	5,861	457	371	619	0	4,414
77 University of Tulsa	5,318	1,264	843	2,548	623	40
78 American University	5,057	4,426	5	106	314	206
79 U Hlth Sci/Chcgo Med Sch	4,908	3,650	0	227	590	441
80 Tuskegee University	4,426	4,137	0	109	123	57
Total, 1st 80 insts.	5,737,380	4,119,187	138,654	402,677	557,219	519,643
81 Alfred University	3,911	320	1,088	1,720	736	47
82 Marquette University	3,821	2,068	28	1,417	308	0
83 Hampton University	3,345	3,345	0	0	0	0
84 Wesleyan University	3,248	1,458	281	0	1,188e	321
85 New York Inst Technology	2,900e	0i	0i	446i	2,454i	0i
86 Texas Christian Univ	2,859	2,430	0	337	92	0
87 Bryn Mawr College	2,490	976	74	0	817	623
88 Xavier University of LA	2,424	2,424	0	0	0	0
89 Institute of Textile Tech	2,148	0	0	2,045	103	0
90 Fordham University	1,816	1,303	169	0	0	344
Total, 1st 90 insts.	5,766,342	4,133,511	140,294	408,642	562,917	520,978
91 Amherst College	1,751	1,132	0	74	545	0
92 Nova University	1,667	1,395	137	115	20	0
93 Santa Clara University	1,579	408	0	188	959	24
94 Occidental College	1,570	381	340	264	268	317
95 Villanova University	1,461	708	455	97	201	0
96 Wentworth Inst of Tech	1,460	1,460	0	0	0	0
97 University of Detroit	1,450	309	0	1,091	50	0
98 Smith College	1,392i	291i	0i	0i	361i	740i
99 Chicago Col of Osteo Med	1,372	175	0	575	549	73
100 Ponce School of Medicine	1,372	1,347	8	0	0	17
Total, 1st 100 insts.	5,781,416	4,141,117	141,234	411,046	565,870	522,149
Total, all other sampled insts.	29,084	16,646	1,311	2,431	4,442	4,254
Estimated total non-sampled insts.	30,677	15,761	1,253	3,496	5,887	4,280

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-38. Industry-sponsored R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	1991	1990	1989	1988	1987	1986	1985	1984
Total, all institutions	1,215,805	1,133,998	998,211	871,772	790,126	699,795	560,021	475,329
1 Mass Inst of Technology	45,712	43,460	39,650	33,256	35,084	34,764	32,007	26,458
2 Pennsylvania State Univ	37,587	34,806	30,256	24,068	20,114	16,905	15,715	12,995
3 University of Michigan	30,807	27,128	22,023	14,782	14,451	12,481	11,677	7,559
4 University of Washington	26,033	22,215	19,135	16,580	18,564	16,493	8,887	6,801
5 University of Ill Urbana	24,434	20,762	15,785	13,686	11,414	8,831	7,506	4,922
6 Texas A & M University	23,050	26,197	21,204	18,534	13,398	7,944	11,731	5,601
7 Duke University	22,876	12,252	12,551	12,379	8,085	7,300	5,193	4,622
8 Georgia Institute of Tech	22,496	21,256	21,346	21,567	23,628	21,944	18,730	18,131
9 N C State Univ at Raleigh	20,961	21,398	21,735	18,580	11,748	10,452	8,249	3,026
10 Carnegie-Mellon Univ	20,438	20,295	18,976	17,092	16,130	17,591	11,780	12,603
Total, 1st 10 insts.	274,394	249,769	222,661	190,524	172,596	154,705	131,475	102,718
11 University of Minnesota	19,270	18,086	12,389	10,670	11,056	11,157	8,135	8,053
12 Cornell University	16,761	16,620	16,627	15,806	17,169	14,256	12,526	13,229
13 Washington University	16,442	14,132	13,500	12,839	12,016	11,352	9,617	8,339
14 Ohio State University	15,409	14,744	20,244	10,910	9,278	7,826	7,140	6,559
15 Johns Hopkins Univ	14,953	14,961	11,013	9,247	7,755	3,538	3,076	2,500e
16 Univ of Southern Cal	13,852	18,896	14,716	11,805	9,999	6,376	5,361	4,800
17 University of Florida	13,376	12,237	10,579	8,529	9,404	7,902	8,254	5,000
18 Univ of Wis-Madison	12,624	12,123	11,035	9,556	8,586	8,007	7,217	5,451
19 VA Polytech Inst & St U	12,443	11,394	9,825	9,058	7,010	6,463	5,924	5,818
20 Rensselaer Polytech Inst	12,236	11,418	9,066	9,014	8,006	5,813i	5,262	4,785
Total, 1st 20 insts.	421,760	394,380	351,655	297,958	272,875	237,395	203,987	167,252
21 University of Arizona	12,091	10,246	9,729	12,245	11,638	11,158	9,402	7,837
22 Univ of Cal Berkeley 1/	11,970	10,892	8,480	8,267	6,580	6,143	0	0
23 Purdue University	11,962	11,632	11,451	10,325	9,579	8,776	9,583	9,232
24 Harvard University	11,957	10,565e	10,461e	9,093e	7,778e	6,723e	5,410e	4,883e
25 Univ of MD College Park	11,938	14,229i	12,940i	11,451i	10,149e	8,124e	7,374e	7,174e
26 Stanford University	11,935	12,931	13,764	11,628	10,979	8 833	8,044	9,043
27 Univ of MD Balt Prof Sch	11,898	12,791	11,183	8,017	7,652	6,827	4,414i	3,402i
28 Univ of Cal San Diego 1/	11,225	9,135	6,824	5,055	5,902	5,995	0	0
29 West Virginia University	11,163	10,082	3,953	754	862	899	588	673
30 Univ of Massachusetts	10,271	11,878	11,480	9,470	8,560	7,427	5,752	4,729
Total, 1st 30 insts.	538,170	508,561	451,920	384,263	352,554	308,300	254,554	214,225
31 Thomas Jefferson Univ	9,966	8,518	8,094	7,465	6,287	5,095	4,740	3,681
32 Univ of Missouri Columbia	9,537	9,130	6,434	4,252	4,206	4,562	3,402	2,128
33 UT SW Medical Ctr-Dallas	9,330	8,537	6,938	5,915	5,566	4,295	3,967	3,620
34 Univ. Of Tennessee System	8,857	7,199	6,515	7,225	5,662	4,286	4,176	3,304
35 Yale University	8,700	7,014	6,563	5,649	5,563	1,790	1,729	1,637
36 Univ of Cal Los Angeles 1/	8,619	8,310	7,548	8,492	14,360	12,659	0	0
37 Louisiana State Univ Sys	8,477	3,759	2,120	2,348	1,481	998	1,372	3,247
38 Univ. of Colorado	8,251	7,426	6,728	5,234	4,502	3,567	2,234	1,809
39 University of Virginia	8,153	6,406	5,768	4,733	3,260	2,941	2,347	2,399
40 Lehigh University	8,133	8,030	7,596	7,479	6,731	5,514	4,286	1,865
Total, 1st 40 insts.	626,193	582,890	516,224	443,055	410,172	354,007	282,807	237,915
41 Univ Alabama Birmingham	7,867	7,241	6,602	6,153	4,544	4,508	3,705	3,117
42 University of Iowa	7,828	6,827	10,301	5,527	2,615	1,706	1,556	1,788
43 Rutgers the St Univ of NJ	7,769	6,754	6,087	4,498	3,087	2,594	2,108	1,817
44 Tufts University	7,740e	7,761e	8,010e	8,375	6,314e	982i	828i	676i
45 Univ of South Carolina	7,625	3,072	1,968	3,053	1,531	1,566	1,442	798
46 University of Kentucky	7,476	6,720	5,819	4,191	6,312	8,173	4,768	4,378
47 University of Connecticut	7,421	6,388	4,996	4,310	3,729	4,090	4,572	3,537
48 Wayne State University	7,295	5,875	3,850	2,897	2,761	1,717	1,241	884
49 Baylor Col of Medicine	7,294	7,746	7,263	5,329	4,879	3,772	4,241	3,932
50 Univ of Pennsylvania	7,171	11,973	9,582	6,230	7,483	7,299	3,685	3,013
Total, 1st 50 insts.	701,679	653,247	580,702	493,618	453,427	390,414	310,953	261,855

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-38. Industry-sponsored R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	1991	1990	1989	1988	1987	1986	1985	1984
51 Mississippi State Univ	7,163	6,389	3,886	3,430	2,823	2,081	1,606	1,250
52 University of Pittsburgh	7,110	6,481	9,406	8,738	6,547	5,428	4,069	2,813
53 Northwestern University	6,960	5,989	5,289	3,532	3,101	2,256	1,690	1,088
54 Emory University	6,920	7,170	6,169	4,701	3,350	2,427	2,395	2,395
55 U Tex Hlth Sci Ctr S Anto	6,876	6,166	5,535	4,908	4,404	4,302	3,458	2,497
56 Arizona State University	6,860	7,354	2,382	2,832	5,575	3,061	2,441	1,588
57 University of Rochester	6,814	6,419	4,913	4,705	6,267	6,714	6,896	7,134
58 Tulane University	6,758	5,952	5,577	5,418	4,945	4,689	4,072	3,372
59 Columbia Univ Main Div	6,619	5,618	5,408	4,841	3,915	4,086	4,027	349
60 Univ of Cal Davis 1/	6,599	7,461	8,039	6,975	5,324	4,510	0	0
Total, 1st 60 insts.	770,358	718,246	637,306	543,698	499,678	429,968	341,607	284,341
61 University of Miami	6,593	5,366	4,702	4,907	7,300	8,897	7,892	5,600
62 Iowa St U of Sci & Tech	6,537	5,525	4,408	3,961	3,597	3,043	3,131	2,925
63 N Mex Inst Mining & Tech	6,512i	10,194	7,695	6,853	5,418	3,335	2,538i	1,739
64 Auburn University	6,450	5,541	4,111	2,615	3,112	2,805	2,699	2,604
65 Boston University	6,405	4,608	2,555	2,379	2,276	2,076	1,994	906
66 U Tex Hlth Sci Ctr Houstn	6,392	5,142	3,266	3,385	3,494	3,661	1,217	883
67 Virginia Commonwlth Univ	6,201	4,835	3,910	3,283	3,192	2,195	2,019	1,412
68 Clemson University	6,163	7,595	3,849	3,791	3,105	2,963	1,800	2,009
69 Univ of South Florida	6,091	4,250	327	144	117	84	75	192
70 New York University	5,947	5,260	4,066	3,677	3,036	4,292	3,742	3,240
Total, 1st 70 insts.	833,649	776,562	676,195	578,693	534,325	463,319	368,714	305,851
71 Wake Forest University	5,927	5,642	4,859	4,183	2,402	1,768i	1,509i	1,254i
72 University of Georgia	5,821	5,797	4,877	5,659	4,982	4,360	3,729	4,356
73 Univ of Texas at Austin	5,734	3,507	2,694	3,175	3,161	2,677	2,136	1,932
74 Univ of Cal San Fran 1/	5,475	5,276	6,226	5,127	4,008	4,119	0	0
75 Creighton University	5,237	6,084	5,229	5,589	4,143i	2,793i	1,345	1,105
76 University of Notre Dame	4,952	3,965	4,204	3,114	2,824	2,743	2,502	1,874
77 New Mexico State Univ	4,939	7,293	6,242	7,844	9,847	6,985	6,237e	5,121e
78 Colorado School of Mines	4,847	4,060	3,793	2,647	1,995	2,516	2,160	2,356
79 Univ of Ill Chicago	4,844	5,157	5,333	2,664	1,728	1,490	909	731
80 Rockefeller University	4,816	4,918	3,453	3,764	3,476	3,321	2,861	2,817
Total, 1st 80 insts.	886,241	828,261	723,105	622,459	572,891	496,091	392,102	327,397
81 Texas Tech University	4,763	4,708	4,697	4,513	4,123	4,213	3,650	2,663i
82 University of Delaware	4,732	4,397	4,073	3,558	3,659	3,551	2,809	2,752
83 Univ of Maine Orono	4,719	4,663	4,002	2,823	2,051	2,856	1,559	2,320
84 Michigan State University	4,693	4,557	4,068	3,615	3,137	2,969	2,686	2,446
85 University of New Mexico	4,684	4,022	2,496	1,140	4,858	4,450	3,875	3,523
86 Case Western Reserve Univ	4,667	4,954	2,915	3,975	3,433	2,992	2,408	1,802
87 Princeton University	4,595	4,964	5,640	4,487	4,122	2,989	1,184	958
88 Georgetown University	4,549	3,362	4,370	2,972	2,536	1,906	2,561	2,531
89 University of Idaho	4,447	3,731	3,788	3,339	2,630	2,670	2,793	2,567
90 Syracuse University	4,405	3,851	3,937	2,595	3,975	7,397	2,298	1,120
Total, 1st 90 insts.	932,495	871,470	763,091	655,476	607,415	532,084	417,925	350,079
91 University of Dayton	4,359	4,790	4,164	4,013	3,335	2,786	2,556	2,226
92 Univ of Central Florida	4,287	3,813	2,580	1,864	1,990i	1,940i	1,514	1,273i
93 University of Kansas	4,228	4,473	2,809	2,934	3,259	2,527	1,426i	1,109i
94 U of VT & State Agr Coll	4,181	3,473	3,486	3,139	2,877	3,331	2,613	2,130
95 Medical College of Wis	4,175	3,189	3,684	3,243	2,018	1,422	1,131	1,043i
96 Univ of Cal Irvine 1/	4,163	3,115	4,582	5,181	4,722	4,295	0	0
97 Michigan Tech University	4,150	3,999	3,584	2,901	2,740	2,490	2,511	1,901
98 Rush University	4,092	3,622	3,714	2,139	1,320	1,447	738	682
99 University of Cincinnati	4,050	4,468	4,160	3,449	2,299	1,655	1,880	1,388
100 Montana State University	4,043	3,833	2,902	2,770	2,454i	2,138	1,628	1,818
Total, 1st 100 insts.	974,223	910,245	798,756	687,109	634,429	556,115	433,922	363,649

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-38. Industry-sponsored R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	1991	1990	1989	1988	1987	1986	1985	1984
101 CUNY Mt Sinai Sch of Med	3,978	4,053	3,732	2,982	2,870	950	1,426	1,795
102 University of Akron	3,813	3,873	2,591	2,422	2,426	2,256	1,056	846
103 Oregon State University	3,776	3,167	2,285	1,944	1,890	4,650i	4,245	3,519
104 Univ of NC at Chapel Hill	3,677	2,179	579	409	509	1,138	1,177	1,047
105 Desert Research Institute	3,670	3,329	3,079	2,868	3,289	2,972	2,402	2,585
106 Rice University	3,600	3,616	3,232	1,195	1,182i	1,066i	1,054	773i
107 University of Lowell	3,599	3,892	2,849	2,626	1,201	816	1,059	1,519
108 Univ of North Texas	3,576	2,407	1,004	783	714	353	347	443
109 University of Oklahoma	3,530	2,562	1,991	1,950	2,026	2,513	2,328	2,075
110 Univ of Med & Dent of N J	3,471	2,908	2,583	1,983	1,421	1,322e	855e	715e
Total, 1st 110 insts.	1,010,913	942,231	822,681	706,271	651,957	574,151	449,871	378,966
111 Temple University	3,452	2,707	2,544	3,699	0	0	274	195
112 Colorado State University	3,380	2,883	2,432	1,525	1,178	1,423	6,467	6,750
113 Univ of Ark Fayetteville	3,323	2,947	2,444	3,112	2,353	2,585	2,093	1,391
114 University of Louisville	3,093	1,403	1,697	400	403	0	0	0
115 SUNY at Buffalo	3,086	2,118	1,759	1,178	779	234	243	0
116 University of Utah	2,908	3,443	2,700	2,248	2,268	1,819	1,706	1,659
117 Univ of Tex at Arlington	2,884	2,286	2,407	1,858	1,138	776	739	820
118 Drexel University	2,873	3,888	4,202	2,928	2,468	2,940	2,237	1,562
119 Univ of Nebraska-Lincoln	2,806	3,394	2,675	2,204	1,938	1,985	1,721	1,545
120 SUNY at Stony Brook	2,783	2,426	3,093	1,624	1,269	1,382	1,412	1,159
Total, 1st 120 insts.	1,041,501	969,726	848,634	727,047	665,751	587,295	466,763	394,047
121 California Inst of Tech	2,764	2,268	3,567	3,273	3,436	3,806	2,678	3,798
122 Dartmouth College	2,719	2,251	1,768	1,273	1,024	930i	659i	566
123 U Tex Med Brnch Galveston	2,652	2,260	1,847	1,781	1,146	1,274i	917	604
124 University of Tulsa	2,548	2,330	2,020	2,093	1,808i	1,457i	1,169e	1,274e
125 Loma Linda University	2,508	3,266	1,964	1,390	420	323i	350	210i
126 Brown University	2,497	3,307	4,291	5,086	4,250	3,848	3,000	2,227
127 The Medical Col of Penna	2,496	1,263	0	0	0	321i	309i	630
128 Northeastern University	2,491i	1,711	953	730	561	525	615	589i
129 Oklahoma State University	2,473	1,963	1,645	3,761	3,170	3,054	2,972	2,631
130 Univ of Texas at Dallas	2,403	740	756	785	658	421	59	105
Total, 1st 130 insts.	1,067,052	991,085	867,445	747,219	682,224	603,254	479,491	406,681
131 The University of Alabama	2,396	1,798	2,082	1,448	1,354	1,800	852	505i
132 Kans St U - Ag & App Sci	2,389	2,483	1,790	2,031	1,515	779	721	848
133 Univ of Cal Santa Barb 1/	2,379	2,655	2,645	2,108	1,970	2,097	0	0
134 Indiana University	2,367	2,316	2,591	2,658	4,597	3,325	2,718	2,361
135 Southern Ill U-Carbondale	2,190	1,884	1,504	1,117	1,191	1,595	1,811	1,575
136 Utah State University	2,155	2,089	1,315	1,529	1,316	1,440	1,365	1,306
137 Med Univ of S. Carolina	2,115	2,264	2,089	1,849	1,548	1,379	1,143	854
138 Washington State Univ	2,074	2,523	2,258	3,335	2,619	2,261	1,465	1,581
139 Clarkson University	2,051	1,638	1,282	978	1,113	1,288	848	708
140 Institute of Textile Tech	2,045	1,869	1,311	1,678	1,238	1,172i	1,109i	1,046i
Total, 1st 140 insts.	1,089,213	1,012,604	886,312	765,950	700,685	620,390	491,523	417,465
141 N J Inst of Technology	2,018	1,710	1,125	1,001	1,026	680	297	105
142 University of Wyoming	2,000	2,001	1,535	1,800	1,216	1,779	1,821	1,734
143 New York Medical College	1,981	1,706	878	2,287	800	656	586	204
144 San Diego State Univ	1,980	1,994	2,303	1,815	1,353	1,012	1,055	326
145 Polytechnic University	1,972	2,278	2,821	1,405	1,245	500	408	904
146 Florida Inst of Tech	1,942	1,205	567	518	216	415	193	128
147 Vanderbilt University	1,941	2,313	2,759	7,938	5,313	4,356	3,376	3,040
148 University of Toledo	1,861	1,885	1,152	703	481i	260	100	33
149 Univ Alabama Huntsville	1,847	2,529	2,170	1,369	992	914	649	597
150 Brigham Young University	1,817	1,845	1,488	1,438	2,150	2,075i	2,001	1,787
Total, 1st 150 insts.	1,108,572	1,032,070	903,110	786,224	715,477	633,037	502,009	426,323

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-38. Industry-sponsored R&D expenditures at universities and colleges: fiscal years 1984-91

[Dollars in thousands]

Institution ranking	1991	1990	1989	1988	1987	1986	1985	1984
151 Univ of South Alabama	1,788	1,553	1,277	1,118	914	896	1,010	948
152 SUNY at Binghamton	1,761	1,308	1,126	909	836	705	524	618
153 Florida Atlantic Univ	1,736	639	626	1,023	999	742	389e	354
154 Medical Col of Georgia	1,731	1,920	1,810	1,078	1,011	955	705	544
155 Alfred University	1,720	1,672	1,475	1,432	1,323	984	496	424
156 SUNY Col of Env Sci & For	1,707	1,867	1,716	1,493	1,153	991i	932	826i
157 U of Neb Med Ctr at Omaha	1,682	1,595	1,194	792	583	558	549	679
158 Oregon Grad Inst Sci/Tech	1,673	1,591	1,573	1,225	1,722	1,746i	1,710i	1,732
159 Illinois Inst of Tech	1,660	1,819	2,089	1,465	1,002	954	870	294
160 Stevens Institute of Tech	1,635	960	600	1,966	1,852	1,786i	1,322i	1,256
Total, 1st 160 insts.	1,125,665	1,046,994	916,596	798,725	726,872	643,354	510,516	433,998
161 Northern Illinois Univ	1,629	2,351	1,656	1,152	890	824	624i	587i
162 U of Houston	1,608	1,529	1,375	1,940	1,959	2,851	1,925	1,500
163 Yeshiva University	1,601	0	0	0	0	0	0	0
164 Worcester Poly Institute	1,595	1,632	1,683	2,028	1,815	2,090i	2,126i	2,163i
165 Univ of Missouri Rolla	1,564	2,186	2,385	3,260	1,153	1,338	1,416	1,095
166 Univ of Alaska Fairbanks	1,547	4,100	3,039	2,672e	3,024i	2,936i	2,878i	2,819i
167 Loyola Univ - Chicago	1,545	1,398	1,305	475	407	639	523	618
168 East Carolina University	1,498	1,692	1,584	1,044	1,029	856	777i	698
169 North Dakota State Univ	1,455	1,289	1,257	1,246	1,995	1,892	1,234i	1,105i
170 University of Chicago	1,425	1,202	1,520	1,814	1,812	1,203	1,044	962
Total, 1st 170 insts.	1,141,132	1,064,373	932,400	814,376	740,956	657,983	523,063	445,545
171 Mercer University	1,424	355	193	33	105	0	0	0i
172 Marquette University	1,417	1,239	921	668	435	314	352	250
173 Florida State University	1,408	669	832	571	280	217	191	72
174 University of Mississippi	1,366	1,250	1,085	998	766	441	890	763
175 Univ of Cal Riverside 1/	1,361	903	1,094	1,692	1,955	2,041	0	0
176 Univ of Missouri Kan City	1,342	1,383	1,330	1,776	1,062	820	547	223
177 Univ of New Hampshire	1,278	1,464	1,183	1,124	1,057	648	895	497
178 Univ of Nevada - Reno	1,276	1,227	1,019	695	687	425i	313i	134i
179 George Washington Univ	1,248	988	1,100	990	359	399i	440	316
180 Univ of Rhode Island	1,212	1,071	2,014e	3,544	1,130	752i	375	0
Total, 1st 180 insts.	1,154,464	1,074,922	943,171	826,467	748,792	664,040	527,066	447,800
181 U of Arkansas Med Sci Cam	1,191	1,117	1,679	753	476	483	279	202
182 Oregon Hlth Sciences Univ	1,099	1,325	706	1,094	243	458	104	422
183 University of Detroit	1,091	1,244	1,125	754	616i	573i	501i	461i
184 Catholic Univ of America	1,064	615	477	313	106	187	323e	103
185 St Louis University	1,058	1,148	913	651	203i	210i	215i	221i
186 U of MD Baltimore County	1,043e	596e	418e	159e	226e	212e	231e	181e
187 University of Denver	1,042i	1,623	1,428	1,638	1,027	1,260	1,444e	1,628e
188 CUNY City College	1,032	442	667	607	1,397	935i	596	270
189 George Mason University	1,000	742	348	215i	184	113i	67i	19
190 Old Dominion U Res Fdn	979	581	353	64	306	316i	221i	153
Total, 1st 190 insts.	1,165,063	1,084,355	951,285	832,715	753,558	668,787	531,047	451,460
191 Cal Poly St U San Luis Ob	916	986	1,097	711	608i	540i	471i	405i
192 SUNY at Albany	876	727	657	399	271	300	144	50
193 Tenn Technological Univ	871	945	836	274	371	309i	248	224
194 Univ of Hawaii-Manoa	856	1,585	799	378	261	508	250	380
195 University of N Dakota	853	1,556	1,264	1,496e	1,583	1,180i	1,082i	947i
196 Oakland University	848	724	751	472	630	394i	332i	273i
197 Western Michigan Univ	843	1,102	852i	603	710	519	428	24
198 Ohio University	839	454	393	100	62	88	180	163
199 Univ of N C at Charlotte	815	381	658	350	236i	206i	182i	154i
200 Woods Hole Ocngrphic Inst	786e	532	916	1,300	667	574	646	572
Total, 1st 200 insts.	1,173,566	1,093,347	959,508	838,798	758,957	673,407	534,990	454,652
Total, all other sampled insts.	27,135	27,281	25,266	32,974	31,169	26,388	25,031	20,677
Estimated total non-sampled insts.	15,104	13,370	13,437	0	0	0	0	0

1/ Data for the University of California in fiscal year 1986 and subsequent years include industry-supported R&D expenditures for the first time. Industry data are not available for fiscal years prior to 1986.

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-39. R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
Total, all institutions	17,620,209	2,892,749	1,936,858	1,119,904	773,959	9,492,904	293,440	745,987	364,408
1 Johns Hopkins Univ	710,095	216,567	118,842	39,546	87,402	222,541	1,243	10,425	13,529
2 University of Michigan	363,582	63,841	21,419	17,742	13,645	191,582	6,960	41,259	7,134
3 University of Minnesota	331,471	27,460	18,143	12,053	30,917	222,512	7,622	12,188	576
4 Univ of Wis-Madison	326,489	43,341	32,841	21,194	8,137	187,200	9,469	22,608	1,699
5 Mass Inst of Technology	318,901	132,421	101,286	12,580	15,963	34,398	7,481	3,461	11,311
6 Stanford University	310,429	92,089	58,283	2,496	11,917	138,102	3,583	3,959	0
7 Cornell University	309,535	43,632	45,572	6,496	27,194	171,008	3,514	11,865	254
8 Texas A & M University	288,005	65,627	17,230	69,272	6,299	111,045	756	8,852	8,924
9 University of Washington	274,423	20,497	15,182	22,771	8,633	172,710	5,256	6,942	22,432
10 Univ of Cal San Francisco	268,700	0	0	0	0	268,700	0	0	0
Total, 1st 10 insts.	3,501,630	705,475	428,798	204,150	210,107	1,719,798	45,884	121,559	65,859
11 Pennsylvania State Univ	267,816	120,336	16,158	15,536	3,870	86,055	5,768	11,274	8,819
12 Univ of Cal San Diego	261,422	5,624	41,115	70,038	9,801	129,711	2,965	2,168	0
13 Univ of Cal Berkeley	258,038	57,481	55,736	3,619	6,455	104,359	6,548	19,894	3,946
14 Univ of Cal Los Angeles	250,033	25,715	22,407	13,813	7,340	157,174	7,142	16,442	0
15 University of Ill Urbana	243,380	54,694	39,511	25,670	20,489	51,838	5,970	10,962	34,246
16 Univ of Texas at Austin	237,043	86,521	59,024	28,919	15,645	18,726	2,608	19,674	5,926
17 Harvard University	229,939	2,346	25,868	7,499	3,753	144,264	2,302	39,711	4,196
18 University of Arizona	213,726	18,080	64,837	16,176	5,178	97,583	2,263	8,271	1,338
19 Univ of MD College Park	206,432	36,868	69,447	8,232	9,138	72,859	3,339	6,549	0
20 Univ of Cal Davis	200,664	9,634	7,471	894	1,256	178,466	800	2,143	0
Total, 1st 20 insts.	5,870,123	1,122,774	830,372	394,546	293,032	2,760,833	85,589	258,647	124,330
21 Univ of Pennsylvania	198,221	10,620	18,260	203	7,804	143,981	1,516	13,484	2,353
22 Ohio State University	194,919	42,950	13,659	5,266	3,469	101,655	558	15,160	12,202
23 Columbia Univ Main Div	194,666	16,785	16,929	29,777	4,906	119,235	1,653	5,381	0
24 Yale University	193,893	7,329	18,737	2,359	5,328	153,527	3,710	2,903	0
25 Georgia Institute of Tech	176,729	124,708	14,422	5,519	19,321	2,705	1,281	8,491	282
26 Univ of Southern Cal	175,595	24,010	7,349	7,798	34,260	87,695	9,776	4,599	108
27 Duke University	164,232	6,512	10,690	2,797	2,396	133,314	2,131	6,392	0
28 University of Georgia	162,992	4,312	8,061	6,625	6,071	114,576	3,526	19,821	0
29 Univ. of Colorado	161,970	21,550	23,171	25,508	5,225	76,518	5,948	4,050	0
30 Baylor Col of Medicine	161,064	0	0	0	0	161,064	0	0	0
Total, 1st 30 insts.	7,654,424	1,381,550	961,650	480,398	381,812	3,855,123	115,688	338,928	139,275
31 Washington University	160,464	2,953	6,217	1,987	5,923	141,528	735	1,121	0
32 Louisiana State Univ Sys	151,433	31,768	9,912	16,303	2,361	83,973	876	5,083	1,157
33 Rutgers the St Univ of NJ	151,335	24,591	18,379	7,909	13,291	64,588	5,894	14,438	2,245
34 Northwestern University	144,809	19,603	11,847	730	4,229	79,551	1,191	1,574	26,084
35 Univ of NC at Chapel Hill	142,681	0	6,965	6,937	9,169	107,075	1,245	11,290	0
36 N C State Univ at Raleigh	142,606	46,343	7,091	6,584	5,814	73,215	137	3,422	0
37 University of Florida	140,257	29,445	10,246	5,270	4,279	83,456	1,493	4,507	1,561
38 Purdue University	136,325	35,130	15,134	2,202	5,897	70,314	1,394	5,883	371
39 Iowa St U of Sci & Tech	134,657	36,768	8,475	605	13,792	62,329	728	8,619	3,341
40 Michigan State University	133,249	15,340 i	22,015 i	1,842 i	504 i	76,581 i	3,081 i	6,948 i	6,938 i
Total, 1st 40 insts.	9,092,240	1,623,491	1,077,931	530,767	447,071	4,697,733	132,462	401,813	180,972
41 University of Rochester	131,777	22,304	12,045	367	1,763	89,004	5,062	902	330
42 University of Pittsburgh	130,322	6,514	10,852	221	1,872	104,112	2,236	3,700	815
43 Univ. Of Tennessee System	128,418	30,817	11,398	9,817	6,959	63,634	379	4,366	1,048
44 VA Polytech Inst & St U	125,256	48,407	9,562	6,294	2,620	52,164	1,253	4,956	0
45 University of Iowa	124,058	10,805	18,778	494	2,104	86,388	1,141	4,139	209
46 Univ of Massachusetts	119,657	9,717	15,937	6,908	8,920	69,401	3,209	4,908	657
47 University of Connecticut	119,526	21,575	3,409	7,621	2,407	74,000	4,539	4,471	1,504
48 University of Chicago	117,344	0	24,551	4,948	2,975	79,961	1,725	3,184	0
49 California Inst of Tech	115,526	17,931	47,728	16,627	5,719	26,275	0	444	802
50 SUNY at Buffalo	113,441	22,881	7,432	580	4,728	69,263	3,681	4,168	688
Total, 1st 50 insts.	10,317,565	1,814,442	1,239,623	584,644	487,138	5,411,955	155,687	437,051	187,025

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-39. R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
51 Univ Alabama Birmingham	113,317	4,711	516	66	694	106,472	753	105	0
52 New York University	112,106	0	4,535	67	10,557	87,436	3,458	5,024	1,029
53 UT MD Anderson Cancer Ctr	108,988	0	4,183	0	2,483	102,322	0	0	0
54 Case Western Reserve Univ	104,199	23,770	5,146	407	249	71,887	343	2,397	0
55 Carnegie-Mellon Univ	103,030	24,615	6,760	2,127	46,912	12,568	4,232	4,276	1,540
56 Indiana University	102,461	656	24,147	765	2,514	62,685	3,566	3,955	4,173
57 University of Miami	96,979	1,643	1,258	19,149	282	70,868	1,102	2,451	226
58 Univ of Missouri Columbia	96,748	9,937	5,123	1,204	359	72,022	1,211	6,481	411
59 University of Virginia	96,733	17,748	11,476	4,827	4,275	50,807	2,534	4,850	216
60 Oregon State University	96,199	8,226	3,747	21,144	2,001	57,612	63	2,748	658
Total, 1st 60 insts.	11,348,325	1,905,748	1,306,514	634,400	557,464	6,106,634	172,949	469,338	195,278
61 University of Utah	94,621	15,116	8,859	3,659	4,691	60,708	1,035	553	0
62 UT SW Medical Ctr-Dallas	94,511	0	0	0	0	94,511	0	0	0
63 Utah State University	94,167	44,842	5,030	11,813	502	22,247	1,460	1,068	7,205
64 Princeton University	92,002	20,134	23,478	6,974	8,103	18,513	5,238	9,562	0
65 Emory University	91,940	0	5,407	48	238	82,778	720	2,749	0
66 SUNY at Stony Brook	90,790	2,640	21,466	11,140	4,136	46,642	1,793	2,308	665
67 Univ of Ill Chicago	90,520	7,940	6,783	256	1,959	59,217	977	3,496	9,892
68 Univ of MD Balt Prof Sch	89,811	0	0	0	0	89,811	0	0	0
69 Univ of Nebraska-Lincoln	87,529	12,377	5,135	5,657	1,267	59,898	315	2,808	72
70 Yeshiva University	86,721	0	0	0	0	86,721	0	0	0
Total, 1st 70 insts.	12,260,937	2,008,797	1,382,672	673,947	578,360	6,727,680	184,487	491,882	213,112
71 Univ of Cal Irvine	82,523	5,171	13,043	147	4,021	55,419	0	3,923	799
72 University of Kentucky	81,137	14,610	2,039	168	598	58,612	187	1,092	3,841
73 Vanderbilt University	80,759	8,554	6,646	132	710	59,736	1,898	3,083	0
74 University of Cincinnati	80,598	15,961	5,879	268	395	54,707	366	258	2,764
75 Colorado State University	80,474	16,406	5,220	9,520	916	39,548	2,476	6,368	0
76 University of Oklahoma	79,777	13,724	5,690	11,009	3,822	33,357	3,501	5,913	2,761
77 New Mexico State Univ	78,736	44,091	3,093	3,069	8,755	18,183	45	1,007	493
78 Univ of Hawaii-Manoa	78,166	1,607	19,762	20,168	312	27,060	229	3,379	5,649
79 Woods Hole Ocngrphic Inst	76,979e	12,165i	0i	64,814i	0i	0i	0i	0i	0i
80 Washington State Univ	75,244	6,792	2,114	817	537	51,727	239	8,293	4,725
Total, 1st 80 insts.	13,055,330	2,147,878	1,446,158	784,059	598,426	7,126,029	193,428	525,208	234,144
81 Boston University	74,881	4,677	9,359	169	1,750	53,665	434	1,446	3,381
82 Rockefeller University	74,090	0	9,031	0	507	64,552	0	0	0
83 Univ of Med & Dent of N J	73,449	0	0	0	0	73,449	0	0	0
84 Univ of South Florida	72,948	16,945	2,325	6,305	227	44,554	1,783	809	0
85 Tulane University	71,781	4,317	1,734	139	759	55,581	473	7,527	1,251
86 Clemson University	70,236	18,715	4,097	193	6,420	34,752	214	5,763	82
87 Wayne State University	69,997	5,624	8,896	0	1,055	49,221	1,189	2,042	1,970
88 Auburn University	69,913	22,182	3,900	251	1,008	40,774	172	394	1,232
89 Oklahoma State University	67,492	13,203	5,102	1,563	1,057	34,743	391	7,968	3,465
90 Univ of Alaska Fairbanks	67,432	3,616	12,818	31,485	208	16,908	0	2,397	0
Total, 1st 90 insts.	13,767,549	2,237,157	1,503,420	824,164	611,417	7,594,228	198,084	553,554	245,525
91 University of New Mexico	67,344	22,083	3,281	1,665	626	29,881	897	5,443	3,468
92 CUNY Mt Sinai Sch of Med	66,310	0	0	0	0	66,310	0	0	0
93 University of Kansas	65,982	4,385	6,648	6,759	301	37,315	1,421	335	8,838
94 Virginia Commonwlth Univ	65,608	120	1,717	0	203	61,605	425	1,538	0
95 Mississippi State Univ	64,335	15,360	2,011	1,427	123	36,510	3	3,736	5,165
96 Arizona State University	63,489	20,129	15,308	5,376	2,268	6,390	2,556	7,489	3,973
97 Georgetown University	60,454	0	5,253	378	1,105	50,375	72	3,251	20
98 Univ of Cal Santa Barbara	59,593	20,648	15,069	10,014	3,440	2,787	2,690	4,945	0
99 Univ of Cal Riverside	57,244	40	4,299	1,413	664	49,362	602	864	0
100 Univ of South Carolina	55,091	14,260	5,282	9,786	1,615	15,674	1,898	5,672	904
Total, 1st 100 insts.	14,392,999	2,334,162	1,562,288	860,982	621,762	7,950,437	208,648	586,827	267,893

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-39. R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
101 Temp a University	54,921	282	2,458	26	506	38,985	2,874	9,768	22
102 U Tex Hlth Sci Ctr Houstn	53,896	0	0	0	0	53,402	0	494	0
103 Florida State University	53,811	846	12,297	7,452	1,525	6,142	2,361	5,661	17,527
104 Kans St U - Ag & App Sci	53,010	6,635	3,162	240	601	39,863	285	1,325	899
105 U Tex Hlth Sci Ctr S Anto	51,768	0	0	0	0	51,768	0	0	0
106 Rensselaer Polytech Inst	50,106	37,927	5,256	1,177	2,849	1,044	146	441	1,266
107 West Virginia University	49,686	7,005	1,775	5,273	10,144	23,283	97	1,586	523
108 Brown University	49,503	9,936	6,907	5,241	7,303	17,979	1,502	635	0
109 Dartmouth College	49,384	5,078	2,150	1,163	749	35,637	347	264	3,996
110 Tufts University	47,748	2,307	1,401	3,565	94	38,493	781	1,107	0
Total, 1st 110 insts.	14,906,832	2,404,178	1,597,694	885,119	645,533	8,257,033	217,041	608,108	292,126
111 Unif Serv Univ of Hlth Sc	47,096	0	0	0	0	47,096	0	0	0
112 U of VT & State Agr Coll	46,541	997	995	437	316	42,285	1,137	88	286
113 U Tex Med Brnch Galveston	45,086	0	0	0	0	45,086	0	0	0
114 University of Delaware	44,696	12,528	7,996	6,563	2,021	10,762	606	4,220	0
115 Wake Forest University	44,214	0	702	0	79	43,223	0	5	205
116 U of Houston	42,292	14,396	16,868	1,145	825	5,253	2,167	1,143	495
117 Univ of Central Florida	41,935	5,418	10,765	7,307	819	1,156	619	378	15,473
118 Oregon Hlth Sciences Univ	41,661	0i	0i	0i	0i	40,272i	1,389i	0i	0i
119 Univ of Ark Fayetteville	40,831	5,710	4,114	792	1,284	24,756	554	2,569	1,052
120 Medical College of Wis	40,446	0	0	0	0	40,446	0	0	0
Total, 1st 120 insts.	15,341,630	2,443,227	1,639,134	901,363	650,877	8,557,368	223,513	616,511	309,837
121 University of Idaho	39,407	8,031	1,849	1,961	51	24,828	37	1,865	785
122 Univ of Rhode Island	38,842	4,708	957	17,442	234	9,796	2,646	2,269	790
123 University of Dayton	37,925	33,660	1,035	200	1,555	371	885	219	0
124 SUNY Hlth Sci Ctr - Syrcs	37,294	0	0	0	0	37,294	0	0	0
125 Texas Tech University	34,994	8,902	3,276	687	768	17,260	105	3,299	697
126 Brandeis University	33,837	0	3,596	0	911	15,608	1,345	12,377	0
127 Thomas Jefferson Univ	33,066	0	0	0	0	33,066	0	0	0
128 SUNY Hlth Sci Ctr - Brkln	32,824	0	0	0	0	32,824	0	0	0
129 Univ of P R-Mayaguez	31,938i	1,673i	174i	1,459i	30i	28,448i	23i	0i	131i
130 Univ of Cal Santa Cruz	31,620	373	14,582	6,836	1,090	7,053	762	924	0
Total, 1st 130 insts.	15,693,377	2,500,574	1,664,603	929,948	655,516	8,763,916	229,316	637,464	312,040
131 Syracuse University	30,606	5,255	5,169	1,250	9,688	5,106	472	3,634	32
132 Rice University	30,577	4,304	9,274	2,685	10,261	3,373	409	271	0
133 Montana State University	30,278	4,330	3,554	469	315	20,272	12	1,326	0
134 George Washington Univ	29,791	5,123	933	104	5,898	16,988	202	442	101
135 Univ of New Hampshire	29,591	3,098	918	15,375	457	6,301	134	1,991	1,317
136 Univ of Nevada - Reno	29,303	3,465	1,165	4,132	28	11,816	57	1,603	7,037
137 San Diego State Univ	28,570	4,466	1,054	581	1,960	12,518	2,181	1,457	4,353
138 Southern Ill U-Carbondale	28,340	5,134	993	456	2,487	12,578	620	1,315	4,757
139 Lehigh University	27,912	20,185	4,995	413	616	843	246	614	0
140 U of Neb Med Ctr at Omaha	27,858	0	0	0	0	27,858	0	0	0
Total, 1st 140 insts.	15,986,203	2,555,934	1,692,658	955,413	687,226	8,881,569	233,649	650,117	329,637
141 Univ Alabama Huntsville	27,499	12,781	7,768	923	4,245	299	8	156	1,319
142 Rush University	27,359	0	0	0	0	25,341	2,018	0	0
143 Univ of Maine Orono	27,082	3,724	685	5,107	66	15,586	292	1,622	0
144 University of Oregon	26,151	939	11,004	2,758	733	7,271	2,043	1,282	121
145 Med Univ of S. Carolina	25,877	0	0	0	0	25,877	0	0	0
146 University of Mississippi	24,748	2,762	5,899	0	16	15,195	267	609	0
147 The Medical Col of Penna	24,645	0	0	0	0	24,645	0	0	0
148 University of Wyoming	23,009	2,603	2,005	3,460	448	12,558	339	88	1,508
149 Loyola Univ - Chicago	22,702	0	385	0	431	21,229	187	468	2
150 University of Notre Dame	21,302	6,583	10,306	161	390	3,366	207	118	171
Total, 1st 150 insts.	16,236,577	2,585,326	1,730,710	967,822	693,555	9,032,936	239,010	654,460	332,758

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-39. R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
151 The University of Alabama	21,248	5,996	4,516	1,992	2,118	2,560	894	2,620	552
152 SUNY at Albany	20,580	0	2,701	7,556	836	2,844	2,947	3,696	0
153 Drexel University	19,705	12,506	2,558	800	911	1,446	141	1,343	0
154 Michigan Tech University	19,667	12,326	1,633	435	201	3,072	0	1,204	796
155 Univ of Nevada, Las Vegas	19,491	604	475	5,387	11,199	541	24	840	421
156 US Naval Postgrad School	19,397	6,599	2,282	3,426	2,030	0	0	3,490	1,570
157 St Louis University	19,183	0	0	652	33	18,493	0	0	5
158 SUNY Col of Env Sci & For	19,049	7,139	1,411	1,864	299	7,892	0	444	0
159 Florida A & M University	18,552	2,797	2,034	0	35	13,686	0	0	0
160 College of William & Mary	18,508	0	3,542	12,784	1,009	702	190	281	0
Total, 1st 160 insts.	16,431,957	2,633,293	1,751,862	1,002,718	712,226	9,084,172	243,206	668,378	336,102
161 Desert Research Institute	17,948	0	0	14,043	0	1,928	0	1,977	0
162 University of N Dakota	16,995	8,361	31	2,674	0	4,137	10	1,060	722
163 Univ of Wis-Milwaukee	16,865	2,998	3,021	2,741	146	3,046	497	3,392	1,024
164 University of Louisville	16,852	1,207	853	372	108	12,762	1	1,549	0
165 N Mex Inst Mining & Tech	16,770e	11,239i	1,611i	3,663i	154i	103i	0i	0i	0i
166 N J Inst of Technology	16,463	6,614	397	5,548	698	0	0	133	3,073
167 U of MD Center For EES	16,205	0	0	16,205	0	0	0	0	0
168 Northeastern University	15,973	5,925	3,442	359	1,694	3,447	701	370	35
169 Howard University	15,731	3,871	1,768	0	2,636	6,508	238	710	0
170 CUNY City College	15,451	4,834	5,879	281	248	3,301	340	101	467
Total, 1st 170 insts.	16,597,210	2,678,342	1,768,864	1,048,604	717,910	9,119,404	244,993	677,670	341,423
171 Wright State University	14,646	2,408	2,362	288	1,255	7,696	502	135	0
172 New York Medical College	14,633	0	0	0	0	14,633	0	0	0
173 Univ of Missouri Rolla	14,432	10,286	2,241	456	386	136	18	11	898
174 U of Arkansas Med Sci Cam	14,250	0	0	0	0	14,250	0	0	0
175 North Dakota State Univ	13,821	1,902	1,662	57	398	8,355	154	1,041	254
176 Hahnemann University	13,536i	0i	0i	0i	0i	12,080i	1,456i	0i	0i
177 University of Akron	13,405	5,197	6,357	89	528	370	306	558	0
178 Colorado School of Mines	12,971	8,648	1,716	737	1,325	0	0	545	0
179 Univ of South Alabama	12,924	120	124	362	11	11,205	337	657	108
180 Univ of Tex at Arlington	12,887	8,240	2,313	401	980	599	99	182	73
Total, 1st 180 insts.	16,734,715	2,715,143	1,785,639	1,050,994	722,791	9,188,728	247,865	680,799	342,756
181 Ohio University	12,796	6,678	1,304	151	33	4,170	334	126	0
182 Brigham Young University	12,682	5,358	2,618	110	258	2,408	15	602	1,313
183 University of Lowell	12,403	3,925	3,266	135	730	2,699	6	19	1,623
184 San Jose State University	12,100	3,114	1,135	4,433	185	337	2,594	302	0
185 Medical Col of Georgia	12,082	0	0	0	0	12,082	0	0	0
186 Memphis State University	12,000	1,397	322	3,047	476	2,167	2,716	1,875	0
187 South Dakota State Univ	11,511	674	197	887	0	9,138	0	615	0
188 Oregon Grad Inst Sci/Tech	11,160	2,948	3,726	2,598	1,888	0	0	0	0
189 Eastern VA Medical School	11,112	0	0	0	0	11,112	0	0	0
190 Univ of North Texas	10,580	502	2,479	1,674	1,854	1,919	274	855	1,023
Total, 1st 190 insts.	16,853,141	2,739,739	1,800,686	1,064,029	728,215	9,234,760	253,804	685,193	346,715
191 Univ of Texas at Dallas	10,571	738	5,058	1,424	379	1,942	216	584	230
192 NC Ag & Tech State Univ	10,427	5,753	346	0	571	3,535	122	100	0
193 Univ of Southwestern LA	10,232	2,037	1,444	122	3,402	1,751	111	759	606
194 Cleveland State Univ	10,205	4,410	984	1	48	456	16	4,310	0
195 Albany Medical College	10,131	0	0	0	0	10,131	0	0	0
196 Northern Illinois Univ	10,074	600	1,850	405	269	2,794	266	3,379	511
197 Old Dominion U Res Fdn	10,040	3,758	1,181	1,642	1,080	2,317	62	0	0
198 Tenn Technological Univ	9,888	8,242	347	17	207	1,047	0	28	0
199 SUNY at Binghamton	9,870	1,014	2,172	618	537	1,438	2,225	1,866	0
200 Boston College	9,810	0	3,084	439	5,222	722	78	265	0
Total, 1st 200 insts.	16,954,389	2,766,291	1,817,132	1,068,697	739,930	9,260,893	256,900	696,484	348,062
Total, all other sampled insts.	525,542	102,483	94,169	28,721	24,748	202,351	24,390	36,021	12,659
Estimated total non-sampled insts.	140,278	23,975	25,557	22,486	9,281	29,660	12,150	13,482	3,687

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to raport more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-40. Federally financed R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
Total, all institutions	10,220,505	1,630,944	1,378,591	704,410	535,156	5,402,408	194,267	247,188	127,541
1 Johns Hopkins Univ	641,239	211,994	117,022	36,233	87,197	177,528	948	5,409	4,908
2 Stanford University	242,340	73,304	50,320	2,009	9,766	102,844	2,703	1,394	0
3 Mass Inst of Technology	237,667	87,421	84,110	10,160	11,317	33,289	6,720	1,285	3,365
4 University of Washington	221,124	12,912	12,098	21,133	7,992	137,829	4,543	3,844	20,773
5 University of Michigan	206,276	36,653	13,067	12,631	8,323	117,241	3,391	13,963	1,007
6 Univ of Cal San Diego	200,451	3,140	36,411	47,954	5,202	105,192	2,163	389	0
7 Univ of Cal San Francisco	190,936	0	0	0	0	190,936	0	0	0
8 Univ of Wis-Madison	183,652	25,715	24,321	14,109	5,592	95,697	7,452	10,684	82
9 Cornell University	173,478	24,456	35,556	3,824	21,959	84,208	1,558	1,902	15
10 Univ of Cal Los Angeles	167,885	19,259	20,161	9,763	5,841	105,228	5,199	2,434	0
Total, 1st 10 insts.	2,465,048	494,854	393,066	157,816	163,189	1,149,992	34,677	41,304	30,150
11 University of Minnesota	164,887	10,524	12,595	2,568	27,230	102,774	4,992	4,204	0
12 Columbia Univ Main Div	163,561	10,828	15,341	29,006	4,049	99,324	1,536	3,477	0
13 Harvard University	156,014	2,045	22,080	6,273	3,333	105,772	1,652	10,922	3,937
14 Yale University	149,506	4,603	16,599	1,648	4,722	119,459	1,705	770	0
15 Pennsylvania State Univ	146,212	78,021	10,095	7,245	2,383	39,322	3,319	4,194	1,633
16 Univ of Pennsylvania	144,451	6,960	15,434	129	6,950	107,024	1,467	4,324	2,163
17 Univ of Cal Berkeley	140,261	29,047	47,227	2,334	5,059	45,570	4,195	6,485	344
18 Univ of Southern Cal	132,230	19,446	7,166	6,294	31,869	58,538	6,753	2,158	4
19 Univ. of Colorado	119,068	13,920	17,886	20,470	3,802	56,353	3,999	2,638	0
20 University of Ill Urbana	118,748	29,347	31,456	5,712	10,487	23,033	3,557	2,967	12,189
Total, 1st 20 insts.	3,899,986	699,595	588,947	239,495	263,073	1,907,161	67,852	83,443	50,420
21 Duke University	114,879	4,948	9,007	1,883	1,794	92,290	2,074	2,883	0
22 Univ of Texas at Austin	113,192	43,157	35,841	10,558	5,961	10,492	1,987	3,691	1,505
23 Washington University	112,475	1,421	5,195	1,390	3,376	99,744	493	856	0
24 University of Rochester	106,874	19,284	11,243	245	1,622	71,086	2,457	791	146
25 Univ of NC at Chapel Hill	103,485	0	5,840	3,123	5,916	81,066	1,134	6,406	0
26 University of Arizona	101,818	7,394	33,633	4,964	3,504	48,095	1,253	1,915	1,060
27 Georgia Institute of Tech	101,476	71,606	8,281	3,169	11,093	1,554	735	4,876	162
28 California Inst of Tech	100,820	15,677	43,033	15,811	5,006	20,485	0	300	508
29 University of Pittsburgh	99,932	3,179	8,527	200	1,264	82,844	1,811	1,339	768
30 Texas A & M University	97,727	12,826	8,616	47,120	2,580	23,178	482	1,531	1,394
Total, 1st 30 insts.	4,952,664	879,087	758,163	327,958	305,189	2,437,995	80,278	108,031	55,963
31 University of Chicago	93,993	0	22,339	3,249	2,593	64,241	960	611	0
32 Ohio State University	88,542	15,849	8,780	3,481	2,410	45,241	305	11,190	1,286
33 New York University	81,896	0	3,963	36	9,331	64,335	3,078	577	576
34 University of Iowa	81,007	4,102	14,983	146	641	59,198	707	1,230	0
35 Univ of Cal Davis	79,961	5,293	6,500	732	472	65,716	720	528	0
36 Baylor Col of Medicine	78,752	0	0	0	0	78,752	0	0	0
37 Univ of MD College Park	77,866	16,331	35,925	5,064	5,034	10,357e	1,125	4,030	0
38 Case Western Reserve Univ	76,390	15,564	3,735	257	240	55,712	233	649	0
39 Univ Alabama Birmingham	76,317	571	388	1	254	74,489	536	78	0
40 Vanderbilt University	71,021	5,908	5,846	129	575	54,887	1,489	2,187	0
Total, 1st 40 insts.	5,758,409	942,705	860,622	341,053	326,739	3,010,923	89,431	129,111	57,825
41 University of Miami	69,847	823	1,222	16,288	260	48,164	1,029	2,047	14
42 SUNY at Buffalo	68,945	7,579	4,332	458	3,525	50,923	1,335	521	272
43 University of Utah	68,769	9,070	6,962	2,154	3,450	45,910	940	263	0
44 Yeshiva University	67,831	0	0	0	0	67,831	0	0	0
45 Purdue University	67,810	19,814	11,732	1,546	4,437	27,515	978	1,419	369
46 Univ of Massachusetts	67,665	4,895	8,707	1,768	6,190	42,313	2,548	973	271
47 Woods Hole Ocngrphic Inst	67,154e	10,461i	0i	56,693i	0i	0i	0i	0i	0i
48 University of Florida	66,777	13,936	5,790	1,915	2,680	39,875	834	1,303	444
49 Carnegie-Mellon Univ	65,290	14,021	5,513	69	34,902	5,197	3,166	2,121	301
50 Univ. Of Tennessee System	63,575	15,411	6,284	6,357	4,386	29,582	297	1,258	0
Total, 1st 50 insts.	6,432,072	1,038,715	911,184	428,301	386,569	3,368,233	100,558	139,016	59,496

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-40. Federally financed R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
51 Northwestern University	62,718	10,294	8,748	585	2,246	35,117	916	366	4,446
52 Indiana University	61,831	126	18,712	454	1,587	36,076	2,605	823	1,448
53 Utah State University	61,762	40,709	3,033	5,607	217	9,326	1,154	248	1,468
54 Michigan State University	61,646	5,211 i	15,337 i	783 i	396 i	31,781 i	1,851 i	3,270 i	3,017 i
55 University of Virginia	61,060	10,565	8,829	4,208	3,270	31,761	2,207	150	70
56 Emory University	60,586	0	4,163	0	199	55,188	587	449	0
57 Boston University	60,166	3,124	8,253	63	1,750	44,027	337	502	2,110
58 SUNY at Stony Brook	58,977	1,929	14,839	6,816	2,768	30,230	1,428	926	21
59 UT SW Medical Ctr-Dallas	57,746	0	0	0	0	57,746	0	0	0
60 New Mexico State Univ	57,522	37,980	2,383	2,200	6,660	7,728	21	448	82
Total, 1st 60 insts.	7,036,086	1,148,653	995,481	449,017	405,702	3,707,213	111,664	146,198	72,158
61 Louisiana State Univ Sys	57,033	18,351	4,758	5,829	566	26,470	594	464	1
62 Colorado State University	55,689	11,117	3,960	8,082	577	26,232	2,123	3,598	0
63 Univ of Cal Irvine	52,652	2,752	12,106	0	3,015	32,290	0	1,737	752
64 Princeton University	52,335	10,283	17,249	4,404	5,927	10,891	2,518	1,063	0
65 Oregon State University	51,099	4,263	2,579	17,962	1,078	24,112	60	855	190
66 Rutgers the St Univ of NJ	48,822	6,863	9,458	945	6,886	16,372	2,522	5,776	0
67 VA Polytech Inst & St U	47,866	24,273	4,480	3,487	1,203	12,257	730	1,436	0
68 University of Cincinnati	47,445	7,903	3,235	172	151	34,159	163	86	1,576
69 N C State Univ at Raleigh	46,894	17,192	3,092	3,276	2,227	20,177	54	876	0
70 Univ of Cal Santa Barbara	46,647	16,677	13,422	7,036	2,429	1,975	1,931	3,177	0
Total, 1st 70 insts.	7,542,568	1,268,327	1,069,820	500,210	429,761	3,912,148	122,359	165,266	74,677
71 University of Connecticut	46,156	2,649	957	4,762	593	34,516	2,406	216	57
72 University of Georgia	45,019	519	3,184	1,652	2,282	34,728	1,090	1,564	0
73 Virginia Commonwlth Univ	44,974	0	1,230	0	179	42,929	337	299	0
74 Univ of Hawaii-Manoa	44,857	796	14,637	15,095	278	10,419	159	355	3,118
75 Univ of MD Balt Prof Sch	43,682	0	0	0	0	43,682	0	0	0
76 Univ of Ill Chicago	43,096	2,566	3,800	117	1,366	30,762	729	555	3,201
77 Iowa St U of Sci & Tech	42,793	12,747	2,797	143	6,670	17,328	146	2,647	315
78 CUNY Mt Sinai Sch of Med	42,035	0	0	0	0	42,035	0	0	0
79 Georgetown University	41,597	0	4,146	323	905	33,957	61	2,188	17
80 Tufts University	39,113	1,797	1,179	3,397	94	31,624	723	299	0
Total, 1st 80 insts.	7,975,890	1,289,401	1,101,750	525,699	442,128	4,234,128	128,010	173,389	81,385
81 Univ of Med & Dent of N J	38,768	0	0	0	0	38,768	0	0	0
82 Rockefeller University	36,759	0	4,149	0	39	32,571	0	0	0
83 Tulane University	36,713	1,405	587	123	263	30,518	211	3,004	602
84 Brown University	35,571	7,144	4,480	4,204	4,420	13,775	1,123	425	0
85 Univ of Alaska Fairbanks	34,335	649	8,540	19,382	122	5,355	0	287	0
86 Dartmouth College	34,317	3,920	1,571	382	541	27,563	218	21	101
87 Wake Forest University	33,385	0	473	0	72	32,811	0	0	29
88 U Tex Hlth Sci Ctr Houstn	32,778	0	0	0	0	32,301	0	477	0
89 U Tex Hlth Sci Ctr S Anto	32,770	0	0	0	0	32,770	0	0	0
90 UT MD Anderson Cancer Ctr	32,314	0	1,968	0	1,012	29,336	0	0	0
Total, 1st 90 insts.	8,323,600	1,302,519	1,123,516	549,790	448,597	4,509,896	129,562	177,603	82,117
91 Washington State Univ	32,257	2,774	1,737	605	300	20,302	92	2,075	4,372
92 University of Kentucky	31,636	3,858	1,557	40	511	23,700	178	785	1,007
93 University of Dayton	31,132	27,703	669	135	1,519	186	872	48	0
94 U of VT & State Agr Coll	30,860	522	727	175	219	28,356	805	2	54
95 Wayne State University	30,583	2,009	1,949	0	112	25,323	822	338	30
96 University of New Mexico	30,141	11,226	2,014	937	219	13,297	730	961	757
97 Oregon Hlth Sciences Univ	28,897	0 i	0 i	0 i	0 i	27,744 i	1,153 i	0 i	0 i
98 Temple University	28,873	123	1,253	4	225	20,532	1,749	4,987	0
99 Florida State University	28,495	111	5,940	4,652	650	3,414	1,301	489	11,938
100 Univ of Nebraska-Lincoln	27,499	1,450	3,189	1,771	548	19,845	218	431	47
Total, 1st 100 insts.	8,623,973	1,352,295	1,142,551	558,109	452,900	4,692,595	137,482	187,719	100,322

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-40. Federally financed R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
101 Univ of Missouri Columbia	27,463	2,167	1,540	401	298	20,858	754	1,445	0
102 University of Kansas	26,419	2,230	2,559	558	234	15,655	745	2	4,436
103 Arizona State University	26,246	5,400	7,056	4,922	1,199	4,002	1,780	1,863	24
104 University of Oklahoma	25,786	5,088	2,100	2,427	1,032	9,971	1,502	2,637	1,029
105 Mississippi State Univ	25,751	10,243	1,369	699	123	11,033	3	1,077	1,204
106 Medical College of Wis	25,062	0	0	0	0	25,062	0	0	0
107 Univ of Rhode Island	23,980	2,390	598	14,209	148	2,560	2,232	1,508	335
108 George Washington Univ	23,715	3,735	804	93	5,590	13,185	104	134	70
109 Univ of South Florida	23,578	10,343	1,436	2,961	143	7,761	545	389	0
110 Rensselaer Polytech Inst	23,372	17,592	2,452	548	1,329	487	68	206	590
Total, 1st 110 insts.	8,875,345	1,411,583	1,162,465	584,927	462,996	4,803,169	145,215	196,980	108,010
111 Thomas Jefferson Univ	23,100	0	0	0	0	23,100	0	0	0
112 Univ of South Carolina	23,084	4,297	3,438	2,962	636	8,352	1,252	1,735	412
113 Rice University	22,838	2,354	7,199	1,683	8,704	2,274	355	269	0
114 Brandeis University	21,280	0	2,718	0	714	11,542	1,178	5,128	0
115 U Tex Med Brnch Galveston	20,974	0	0	0	0	20,974	0	0	0
116 Univ Alabama Huntsville	20,363	9,175	6,322	629	2,807	233	4	117	1,076
117 U of Houston	20,140	3,694	10,125	347	436	2,916	1,620	629	373
118 University of Delaware	20,053	4,561	5,205	4,185	1,574	2,370	486	1,672	0
119 West Virginia University	19,582	3,492	746	3,713	389	10,567	70	130	475
120 University of Oregon	19,311	611	7,952	2,209	551	6,062	1,380	546	0
Total, 1st 120 insts.	9,086,070	1,439,767	1,206,170	600,655	478,807	4,891,559	151,560	207,206	110,346
121 US Naval Postgrad School	19,264	6,504	2,279	3,423	1,998	0	0	3,490	1,570
122 Univ of New Hampshire	18,516	1,558	855	11,745	305	2,716e	132	1,205	0
123 SUNY Hlth Sci Ctr - Brkln	17,949	0	0	0	0	17,949	0	0	0
124 Univ of Nevada, Las Vegas	17,568	553	228	4,731	11,159	379	0	251	267
125 University of Mississippi	16,937	2,229	4,966	0	7	9,132	242	361	0
126 San Diego State Univ	16,744	3,385	723	420	1,262	7,364	2,046	755	789
127 Clemson University	16,594	5,134	1,117	87	1,145	7,693	8	1,400	10
128 St Louis University	16,358	0	0	646	32	15,680	0	0	0
129 Univ of Cal Riverside	16,031	40	4,068	758	349	10,382	380	54	0
130 Univ of Cal Santa Cruz	15,805	0	6,507	4,089	644	3,572	640	353	0
Total, 1st 130 insts.	9,257,836	1,459,170	1,226,913	626,554	495,708	4,966,426	155,008	215,075	112,982
131 Oklahoma State University	15,756	6,027	1,777	60	297	6,625	152	748	70
132 Kans St U - Ag & App Sci	15,726	1,615	2,766	152	176	10,404	111	283	219
133 Florida A & M University	15,592	1,610	1,916	0	0	12,066	0	0	0
134 Auburn University	15,279	6,646	1,351	153	351	5,843	71	5	859
135 University of Idaho	15,149	4,597	738	624	28	8,523	14	510	115
136 The Medical Col of Penna	14,960	0	0	0	0	14,960	0	0	0
137 Loyola Univ - Chicago	14,703	0	332	0	431	13,720	11	209	0
138 Univ of P R-Mayaguez	14,613i	1,083i	174i	1,275i	21i	11,987i	0i	0i	73i
139 University of N Dakota	14,470	7,740	10	2,153	0	3,594	0	537	436
140 Med Univ of S. Carolina	14,367	0	0	0	0	14,367	0	0	0
Total, 1st 140 insts.	9,408,451	1,488,488	1,235,977	630,971	497,012	5,068,515	155,367	217,367	114,754
141 Syracuse University	14,192	1,563	3,732	656	2,556	4,580	366	739	0
142 University of Notre Dame	13,587	2,764	8,643	36	357	1,487	145	94	61
143 Unif Serv Univ of Hlth Sc	12,846	0	0	0	0	12,846	0	0	0
144 University of Wyoming	12,782	2,019	1,791	1,798	399	6,041	330	62	342
145 Univ of Ark Fayetteville	12,371	2,457	1,407	208	224	7,506	0	361	208
146 SUNY at Albany	12,204	0	1,780	3,136	464	2,031	2,128	2,665	0
147 Lehigh University	11,870	7,703	2,605	240	172	524	157	469	0
148 CUNY City College	11,220	2,197	5,444	175	239	2,433	186	79	467
149 New York Medical College	11,056	0	0	0	0	11,056	0	0	0
150 Univ of Nevada - Reno	10,858	2,504	1,081	2,044	28	5,054	0	140	7
Total, 1st 150 insts.	9,531,437	1,509,695	1,262,460	639,264	501,451	5,122,073	158,679	221,976	115,839

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-40. Federally financed R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
151 Howard University	10,754	2,685	1,487	0	2,258	3,714	204	406	0
152 SUNY Hlth Sci Ctr - Syrcs	10,667	0	0	0	0	10,667	0	0	0
153 U of Neb Med Ctr at Omaha	10,518	0	0	0	0	10,518	0	0	0
154 Univ of Central Florida	10,408	1,171	1,794	653	558	99	344	49	5,738
155 Montana State University	10,109	1,850	1,789	66	177	6,115	0	112	0
156 Univ of Maine Orono	10,062	791	528	3,606	11	4,548	208	370	0
157 Northeastern University	9,961 i	3,531 i	2,209 i	0 i	1,101 i	2,568 i	448 i	69 i	35 i
158 Desert Research Institute	9,795	0	0	7,337	0	874	0	1,584	0
159 Texas Tech University	9,323	2,419	1,021	112	155	4,343	1	1,272	0
160 Boston College	8,673	c	2,901	406	4,529	692	24	121	0
Total, 1st 160 insts.	9,631,735	1,522,142	1,274,189	651,444	510,240	5,166,211	159,908	225,959	121,612
161 NC Ag & Tech State Univ	8,205	4,049	327	0	461	3,189	122	57	0
162 Medical Col of Georgia	8,081	0	0	0	0	8,081	0	0	0
163 Wright State University	8,047	921	1,034	39	813	4,887	353	0	0
164 Hahnemann University	8,037 i	0 i	0 i	0 i	0 i	7,221 i	816 i	0 i	0 i
165 San Jose State University	7,978	1,895	669	2,711	76	46	2,490	91	0
166 U of Arkansas Med Sci Cam	7,807	0	0	0	0	7,807	0	0	0
167 Univ of South Alabama	7,798	38	55	188	6	6,902	273	356	0
168 Drexel University	7,559	4,957	1,348	584	95	521	0	54	0
169 College of William & Mary	7,283	0	2,444	3,788	675	247	9	120	0
170 Eastern VA Medical School	7,093	0	0	0	0	7,093	0	0	0
Total, 1st 170 insts.	9,709,593	1,534,002	1,280,066	658,734	512,366	5,212,205	163,971	226,637	121,612
171 Southern Ill U-Carbondale	7,092	812	140	117	128	5,121	373	183	218
172 Brigham Young University	7,082	3,625	1,313	93	160	1,446	6	93	348
173 Meharry Medical College	7,014	0	0	0	0	7,014	0	0	0
174 Rush University	7,010	0	0	0	0	6,174	836	0	0
175 Univ of Texas at El Paso	6,972	2,834	933	431	607	1,469	427	271	0
176 Oregon Grad Inst Sci/Tech	6,962	1,876	2,357	1,251	1,478	0	0	0	0
177 North Dakota State Univ	6,882	1,036	906	38	53	4,122	68	565	94
178 Michigan Tech University	6,870	3,855	1,225	319	65	1,311	0	95	0
179 Univ of Wis-Milwaukee	6,808	1,232	1,298	1,054	10	1,167	360	1,532	155
180 University of Louisville	6,750	503	558	101	67	5,349	0	172	0
Total, 1st 180 insts.	9,779,035	1,549,773	1,288,796	662,138	514,934	5,245,378	166,041	229,548	122,427
181 Univ of Sthrn Mississippi	6,736	38	5,462	568	72	370	175	51	0
182 Old Dominion U Res Fdn	6,576	3,208	1,051	1,267	749	281	20	0	0
183 University of Lowell	6,541	1,971	2,386	122	185	994	0	10	893
184 Clark Atlanta University	6,538	0	2,588	1,073	0	2,877	0	0	0
185 Colorado School of Mines	6,487	4,227	1,099	368	503	0	0	290	0
186 Mercer University	6,388	6,261	0	0	0	127	0	0	0
187 Catholic Univ of America	6,301	1,399	3,639	0	0	667	486	110	0
188 Albany Medical College	6,291	0	0	0	0	6,291	0	0	0
189 Med Col of Ohio at Toledo	5,970	0	0	0	0	5,970	0	0	0
190 Southern Methodist Univ	5,966	176	197	3,886	439	611	176	63	418
Total, 1st 190 insts.	9,842,829	1,567,053	1,305,198	669,422	518,882	5,263,566	166,898	230,072	123,738
191 N Mex Inst Mining & Tech	5,718 i	2,567 i	1,107 i	1,979 i	0 i	65 i	0 i	0 i	0 i
192 Polytechnic University	5,600	4,140	1,360	0	60	0	0	0	40
193 CUNY Hunter College	5,524	0	1,987	110	190	2,305	733	199	0
194 Alabama A & M University	5,481	40	3,210	0	0	2,225	0	6	0
195 The University of Alabama	5,427	1,970	1,770	585	39	710	144	64	145
196 Virginia State University	5,347	0	1,880	199	0	3,268	0	0	0
197 Chas R Drew U of Med & Sc	5,311	0	0	0	0	5,311	0	0	0
198 Kent State University	5,171	150	2,521	167	781	659	688	205	0
199 Morehouse School of Med	5,020 i	0 i	0 i	0 i	0 i	5,020 i	0 i	0 i	0 i
200 Univ of Texas at Dallas	4,822	100	3,039	399	90	1,051	102	41	0
Total, 1st 200 insts.	9,896,250	1,576,020	1,322,072	672,861	518,042	5,284,180	168,565	230,587	123,923
Total, all other sampled insts.	259,914	45,190	43,832	17,867	12,854	107,145	15,710	13,903	3,413
Estimated total non-sampled insts.	64,341	9,734	12,687	13,682	4,260	11,083	9,992	2,698	205

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-41. Non-Federal R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
Total, all institutions	7,399,704	1,261,805	558,267	415,494	238,803	4,090,496	99,173	498,800	236,867
1 Texas A & M University	190,278	52,801	8,614	22,152	3,719	87,867	274	7,321	7,530
2 University of Minnesota	166,584	16,936	5,548	9,485	3,687	119,738	2,630	7,984	576
3 University of Michigan	157,306	27,188	8,352	5,111	5,322	74,341	3,569	27,296	6,127
4 Univ of Wis-Madison	142,837	17,626	8,520	7,085	2,545	91,503	2,017	11,924	1,617
5 Cornell University	136,057	19,176	10,016	2,672	5,235	86,800	1,956	9,963	239
6 Univ of MD College Park	128,566	20,537	33,522	3,168	4,104	62,502e	2,214	2,519	0
7 University of Ill Urbana	124,632	25,347	8,055	19,958	10,002	28,805	2,413	7,995	22,057
8 Univ of Texas at Austin	123,851	43,364	23,183	18,361	9,684	8,234	621	15,983	4,421
9 Pennsylvania State Univ	121,604	42,315	6,063	8,291	1,487	46,733	2,449	7,080	7,186
10 Univ of Cal Davis	120,703	4,341	971	162	784	112,750	80	1,615	0
Total, 1st 10 insts.	1,412,418	269,631	112,844	96,445	46,569	719,273	18,223	99,680	49,753
11 University of Georgia	117,973	3,793	4,877	4,973	3,789	79,848	2,436	18,257	0
12 Univ of Cal Berkeley	117,777	28,434	8,509	1,285	1,396	58,789	2,353	13,409	3,602
13 University of Arizona	111,908	10,686	31,204	11,212	1,674	49,488	1,010	6,356	278
14 Ohio State University	106,377	27,101	4,879	1,785	1,059	56,414	253	3,970	10,916
15 Rutgers the St Univ of NJ	102,513	17,728	8,921	6,964	6,405	48,216	3,372	8,662	2,245
16 N C State Univ at Raleigh	95,712	29,151	3,999	3,308	3,587	53,038	83	2,546	0
17 Louisiana State Univ Sys	94,400	13,417	5,154	10,474	1,795	57,503	282	4,619	1,156
18 Iowa St U of Sci & Tech	91,864	24,021	5,678	462	7,122	45,001	582	5,972	3,026
19 Baylor Col of Medicine	82,332	0	0	0	0	82,332	0	0	0
20 Univ of Cal Los Angeles	82,148	6,456	2,246	4,050	1,499	51,946	1,943	14,008	0
Total, 1st 20 insts.	2,415,422	430,418	188,311	140,958	74,895	1,301,848	30,537	177,479	70,976
21 Northwestern University	82,091	9,309	3,099	145	1,983	44,434	275	1,208	21,638
22 Mass Inst of Technology	81,234	45,000	17,176	2,420	4,646	1,109	761	2,176	7,946
23 Univ of Cal San Francisco	77,764	0	0	0	0	77,764	0	0	0
24 VA Polytech Inst & St U	77,390	24,134	5,082	2,807	1,417	39,907	523	3,520	0
25 UT MD Anderson Cancer Ctr	76,674	0	2,217	0	1,471	72,986	0	0	0
26 Georgia Institute of Tech	75,253	53,102	6,141	2,350	8,228	1,151	546	3,615	120
27 Harvard University	73,925	301	3,788	1,226	420	38,492	650	28,789	259
28 University of Florida	73,480	15,509	4,456	3,355	1,599	43,581	659	3,204	1,117
29 University of Connecticut	73,370	18,926	2,452	2,859	1,814	39,484	2,133	4,255	1,447
30 Michigan State University	71,603	10,129i	6,678i	1,059i	108i	44,800i	1,230i	3,678i	3,921i
Total, 1st 30 insts.	3,178,206	606,828	239,400	157,179	96,581	1,705,556	37,314	227,924	107,424
31 Univ of Missouri Columbia	69,285	7,770	3,583	803	61	51,164	457	5,036	411
32 Johns Hopkins Univ	68,856	4,573	1,820	3,313	205	45,013	295	5,016	8,621
33 Purdue University	68,515	15,316	3,402	656	1,460	42,799	416	4,464	2
34 Stanford University	68,089	18 785	7,963	487	2,151	35,258	880	2,565	0
35 Univ. Of Tennessee System	64,843	15,406	5,114	3,460	2,573	34,052	82	3,108	1,048
36 Univ of Cal San Diego	60,971	2,484	4,704	22,084	4,599	24,519	802	1,779	0
37 Univ of Nebraska-Lincoln	60,030	10,927	1,946	3,886	719	40,053	97	2,377	25
38 Auburn University	54,634	15,536	2,549	98	657	34,931	101	389	373
39 University of Oklahoma	53,991	8,636	3,590	8,582	2,790	23,386	1,999	3,276	1,732
40 Univ of Pennsylvania	53,770	3,660	2,826	74	854	36,957	49	9,160	190
Total, 1st 40 insts.	3,801,190	709,921	276,897	200,622	112,650	2,073,688	42,492	265,094	119,826
41 Clemson University	53,642	13,581	2,980	106	5,275	27,059	206	4,363	72
42 University of Washington	53,299	7,585	3,084	1,638	641	34,881	713	3,098	1,659
43 Univ of Massachusetts	51,992	4,822	7,230	5,140	2,730	27,088	661	3,935	386
44 Oklahoma State University	51,736	7,176	3,325	1,503	760	28,118	239	7,220	3,395
45 University of Kentucky	49,501	10,752	482	128	87	34,912	9	297	2,834
46 Univ of South Florida	49,370	6,602	889	3,344	84	36,793	1,238	420	0
47 Duke University	49,353	1,564	1,683	914	602	41,024	57	3,509	0
48 Washington University	47,989	1,532	1,022	597	2,547	41,784	242	265	0
49 Univ of Ill Chicago	47,424	5,374	2,983	139	593	28,455	248	2,941	6,691
50 Univ of MD Balt Prof Sch	46,129	0	0	0	0	46,129	0	0	0
Total, 1st 50 insts.	4,301,625	768,909	300,575	214,131	125,969	2,419,931	46,105	291,142	134,863

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-41. Non-Federal R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
51 Oregon State University	45,100	3,963	1,168	3,182	923	33,500	3	1,893	468
52 SUNY at Buffalo	44,496	15,302	3,100	122	1,203	18,360	2,346	3,647	416
53 Yale University	44,387	2,726	2,138	711	606	34,068	2,005	2,133	0
54 Univ of Southern Cal	43,365	4,564	181	1,504	2,391	29,157	3,023	2,441	104
55 University of Iowa	43,051	6,703	3,795	348	1,463	27,190	434	2,909	209
56 Washington State Univ	42,987	4,018	377	212	237	31,425	147	6,218	353
57 Univ. of Colorado	42,902	7,630	5,285	5,038	1,423	20,165	1,949	1,412	0
58 Univ of Cal Riverside	41,213	0	231	655	315	38,980	222	810	0
59 Indiana University	40,630	530	5,435	311	927	26,609	961	3,132	2,725
60 Princeton University	39,667	9,851	6,229	2,570	2,176	7,622	2,720	8,499	0
Total, 1st 60 insts.	4,729,423	824,196	328,514	228,784	137,633	2,687,007	59,915	324,236	139,138
61 University of Kansas	39,563	2,135	4,089	6,201	67	21,660	676	333	4,402
62 Wayne State University	39,414	3,615	6,947	0	943	23,898	367	1,704	1,940
63 Univ of NC at Chapel Hill	39,196	0	1,125	3,814	3,253	26,009	111	4,884	0
64 Mississippi State Univ	38,584	5,117	642	728	0	25,477	0	2,659	3,961
65 Carnegie-Mellon Univ	37,740	10,594	1,247	2,058	12,010	7,371	1,066	2,155	1,239
66 Rockefeller University	37,331	0	4,882	0	468	31,981	0	0	0
67 Kans St U - Ag & App Sci	37,284	5,020	396	88	425	29,459	174	1,042	680
68 Arizona State University	37,243	14,729	8,252	454	1,069	2,388	776	5,626	3,949
69 University of New Mexico	37,203	10,857	1,267	728	407	16,584	167	4,482	2,711
70 Univ Alabama Birmingham	37,000	4,140	128	65	440	31,983	217	27	0
Total, 1st 70 insts.	5,109,981	880,403	357,489	242,920	156,715	2,903,817	63,469	347,148	158,020
71 UT SW Medical Ctr-Dallas	36,765	0	0	0	0	36,765	0	0	0
72 University of Virginia	35,673	7,183	2,647	619	1,005	19,046	327	4,700	146
73 Tulane University	35,068	2,912	1,147	16	496	25,063	262	4,523	649
74 Univ of Med & Dent of N J	34,681	0	0	0	0	34,681	0	0	0
75 Unif Serv Univ of Hlth Sc	34,250	0	0	0	0	34,250	0	0	0
76 Univ of Hawaii-Manoa	33,309	811	5,125	5,073	34	16,641	70	3,024	2,531
77 University of Cincinnati	33,153	8,058	2,644	96	244	20,548	203	172	1,188
78 Univ of Alaska Fairbanks	33,097	2,967	4,278	12,103	86	11,553	0	2,110	0
79 Utah State University	32,405	4,133	1,997	6,206	285	12,921	306	820	5,737
80 Univ of South Carolina	32,007	9,963	1,844	6,824	979	7,322	646	3,937	492
Total, 1st 80 insts.	5,450,389	916,430	377,171	273,857	159,844	3,122,607	65,283	366,434	168,763
81 SUNY at Stony Brook	31,813	711	6,627	4,324	1,348	16,412	365	1,382	644
82 Univ of Central Florida	31,529	4,247	8,971	6,654	261	1,057	275	329	9,735
83 Emory University	31,354	0	1,244	48	39	27,590	133	2,300	0
84 Columbia Univ Main Div	31,105	5,957	1,588	771	857	19,911	117	1,904	0
85 University of Pittsburgh	30,390	3,335	2,325	21	608	21,268	425	2,361	47
86 New York University	30,210	0	572	31	1,226	23,101	380	4,447	453
87 West Virginia University	30,104	3,513	1,029	1,560	9,755	12,716	27	1,456	48
88 Univ of Cal Irvine	29,871	2,419	937	147	1,006	23,129	0	2,186	47
89 Univ of Ark Fayetteville	28,460	3,253	2,707	584	1,060	17,250	554	2,208	844
90 Case Western Reserve Univ	27,809	8,206	1,411	150	9	16,175	110	1,748	0
Total, 1st 90 insts.	5,753,034	948,071	404,582	288,147	176,013	3,301,216	67,669	386,755	180,581
91 University of Miami	27,132	820	36	2,861	22	22,704	73	404	212
92 Rensselaer Polytech Inst	26,734	20,235	2,804	629	1,520	557	78	235	676
93 SUNY Hlth Sci Ctr - Syrcs	26,627	0	0	0	0	26,627	0	0	0
94 Temple University	26,048	159	1,205	22	281	18,453	1,125	4,781	22
95 University of Utah	25,852	6,046	1,877	1,505	1,241	14,798	95	290	0
96 Texas Tech University	25,671	6,483	2,255	575	613	12,917	104	2,027	697
97 Florida State University	25,316	735	6,357	2,800	875	2,728	1,060	5,172	5,589
98 University of Rochester	24,903	3,020	802	122	141	17,918	2,605	111	184
99 Colorado State University	24,785	5,289	1,260	1,438	339	13,316	353	2,790	0
100 University of Delaware	24,643	7,967	2,791	2,378	447	8,392	120	2,548	0
Total, 1st 100 insts.	6,010,745	998,825	423,969	300,477	181,492	3,439,626	73,282	405,113	187,961

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-41. Non-Federal R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
101 CUNY Mt Sinai Sch of Med	24,275	0	0	0	0	24,275	0	0	0
102 University of Idaho	24,258	3,434	1,111	1,337	23	16,305	23	1,355	670
103 U Tex Med Brnch Galveston	24,112	0	0	0	0	24,112	0	0	0
104 University of Chicago	23,351	0	2,212	1,699	382	15,720	765	2,573	0
105 U of Houston	22,152	10,702	6,743	798	389	2,337	547	514	122
106 Southern Ill U-Carbondale	21,248	4,322	853	339	2,359	7,457	247	1,132	4,539
107 New Mexico State Univ	21,214	6,111	710	869	2,075	10,455	24	559	411
108 U Tex Hlth Sci Ctr Houstn	21,118	0	0	0	0	21,101	0	17	0
109 Virginia Commonwlth Univ	20,634	120	487	0	24	18,676	88	1,239	0
110 Rush University	20,349	0	0	0	0	19,167	1,182	0	0
Total, 1st 110 insts.	6,233,456	1,023,514	436,085	305,519	186,744	3,599,231	76,158	412,502	193,703
111 Montana State University	20,169	2,480	1,765	403	138	14,157	12	1,214	0
112 U Tex Hlth Sci Ctr S Anto	18,998	0	0	0	0	18,998	0	0	0
113 Yeshiva University	18,890	0	0	0	0	18,890	0	0	0
114 Georgetown University	18,857	0	1,107	55	200	16,418	11	1,063	3
115 Univ of Nevada - Reno	18,445	961	84	2,088	0	6,762	57	1,463	7,030
116 U of Neb Med Ctr at Omaha	17,340	0	0	0	0	17,340	0	0	0
117 Univ of P R-Mayaguez	17,325i	590i	0i	184i	9i	16,461i	23i	0i	58i
118 Univ of Maine Orono	17,020	2,933	157	1,501	55	11,038	84	1,252	0
119 SUNY Col of Env Sci & For	16,923	6,970	1,119	1,678	253	6,492	0	411	0
120 Syracuse University	16,414	3,692	1,437	594	7,132	526	106	2,895	32
Total, 1st 120 insts.	6,413,837	1,041,140	441,754	312,022	194,531	3,726,313	76,451	420,800	200,826
121 Lehigh University	16,042	12,482	2,390	173	444	319	89	145	0
122 The University of Alabama	15,821	4,026	2,746	1,407	2,079	1,850	750	2,556	407
123 Univ of Cal Santa Cruz	15,815	373	8,075	2,747	446	3,481	122	571	0
124 U of VT & State Agr Coll	15,681	475	268	262	97	13,929	332	86	232
125 Medical College of Wis	15,384	0	0	0	0	15,384	0	0	0
126 Dartmouth College	15,067	1,158	579	781	208	8,074	129	243	3,895
127 SUNY Hlth Sci Ctr - Brkln	14,875	0	0	0	0	14,875	0	0	0
128 Univ of Rhode Island	14,862	2,318	359	3,233	86	7,236	414	761	455
129 Boston University	14,715	1,553	1,106	106	0	9,638	97	944	1,271
130 California Inst of Tech	14,706	2,254	4,695	816	713	5,790	0	144	294
Total, 1st 130 insts.	6,566,805	1,065,779	461,972	321,547	198,604	3,806,889	78,384	426,250	207,380
131 Brown University	13,932	2,792	2,427	1,037	2,883	4,204	379	210	0
132 U of MD Center For EES	13,348	0	0	13,348	0	0	0	0	0
133 Univ of Cal Santa Barbara	12,946	3,971	1,647	2,978	1,011	812	759	1,768	0
134 Michigan Tech University	12,797	8,471	408	116	136	1,761	0	1,109	796
135 Oregon Hlth Sciences Univ	12,764	0i	0i	0i	0i	12,528i	236i	0i	0i
136 Brandeis University	12,557	0	878	0	197	4,066	167	7,249	0
137 N J Inst of Technology	12,383	4,990	244	4,253	553	0	0	111	2,232
138 Drexel University	12,146	7,549	1,210	216	816	925	141	1,289	0
139 San Diego State Univ	11,826	1,081	331	161	698	5,154	135	702	3,564
140 Med Univ of S. Carolina	11,510	0	0	0	0	11,510	0	0	0
Total, 1st 140 insts.	6,693,014	1,094,633	469,117	343,656	204,898	3,847,849	80,201	438,688	213,972
141 College of William & Mary	11,225	0	1,098	8,996	334	455	181	161	0
142 Univ of New Hampshire	11,075	1,540	63	3,630	152	3,585e	2	786	1,317
143 N Mex Inst Mining & Tech	11,052i	8,672i	504i	1,684i	154i	38i	0i	0i	0i
144 Wake Forest University	10,829	0	229	0	7	10,412	0	5	176
145 University of Wyoming	10,227	584	214	1,662	49	6,517	9	26	1,166
146 Univ of Tex at Arlington	10,146	6,885	1,537	217	807	472	76	152	0
147 University of Louisville	10,102	704	295	271	41	7,413	1	1,377	0
148 Univ of Missouri Rolla	10,072	7,089	1,516	226	271	43	18	11	898
149 Univ of Wis-Milwaukee	10,057	1,766	1,723	1,687	136	1,879	137	1,860	869
150 University of Akron	9,994	3,878	4,921	43	241	359	306	246	0
Total, 1st 150 insts.	6,797,793	1,125,751	481,217	362,072	207,090	3,879,022	80,931	443,312	218,398

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-41. Non-Federal R&D expenditures at universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
151 Thomas Jefferson Univ	9,966	0	0	0	0	9,966	0	0	0
152 Woods Hole Ocngrphic Inst	9,825e	1,704i	0i	8,121i	0i	0i	0i	0i	0i
153 Vanderbilt University	9,738	2,646	800	3	135	4,849	409	896	0
154 The Medical Col of Penna	9,685	0	0	0	0	9,685	0	0	0
155 Univ of Southwestern LA	9,303	1,992	1,286	117	2,994	1,447	110	751	606
156 Memphis State University	9,046	1,008	257	2,359	96	1,608	2,051	1,667	0
157 Tenn Technological Univ	8,939	7,918	118	17	121	737	0	28	0
158 Univ of North Texas	8,638	345	1,737	1,421	1,619	1,515	222	756	1,023
159 Tufts University	8,635	510	222	168	0	6,869	58	808	0
160 SUNY at Albany	8,376	0	921	4,420	372	813	819	1,031	0
Total, 1st 160 insts.	6,889,944	1,141,874	486,558	378,698	212,427	3,916,511	84,600	449,249	220,027
161 Ohio University	8,257	4,159	541	115	32	3,178	106	126	0
162 Desert Research Institute	8,153	0	0	6,706	0	1,054	0	393	0
163 Loyola Univ - Chicago	7,999	0	53	0	0	7,509	176	259	2
164 University of Mississippi	7,811	533	933	0	9	6,063	25	248	0
165 Rice University	7,739	1,950	2,075	1,002	1,557	1,099	54	2	0
166 University of Notre Dame	7,715	3,819	1,663	125	33	1,879	62	24	110
167 South Dakota State Univ	7,409	525	157	554	0	5,769	0	404	0
168 Univ Alabama Huntsville	7,136	3,606	1,446	294	1,438	66	4	39	243
169 North Dakota State Univ	6,939	866	756	19	343	4,233	86	476	160
170 University of Oregon	6,840	328	3,052	549	182	1,209	663	736	121
Total, 1st 170 insts.	6,965,942	1,157,660	497,234	388,062	216,021	3,948,570	85,776	451,956	220,663
171 University of Dayton	6,793	5,957	366	65	36	185	13	171	0
172 SUNY at Binghamton	6,740	781	1,436	230	392	642	1,459	1,800	0
173 Wright State University	6,599	1,487	1,328	249	442	2,809	149	135	0
174 Colorado School of Mines	6,484	4,421	617	369	822	0	0	255	0
175 Inst Paper Sci and Tech	6,479	3,604	1,521	0	547	807	0	0	0
176 U of Arkansas Med Sci Cam	6,443	0	0	0	0	6,443	0	0	0
177 George Washington Univ	6,076	1,388	129	11	308	3,803	98	308	31
178 Northeastern University	6,012i	2,394i	1,233i	359i	593	879i	253i	301i	0i
179 University of Lowell	5,862	1,954	900	13	545	1,705	6	9	730
180 Georgia State University	5,755	0	988	87	498	891	1,402	1,422	467
Total, 1st 180 insts.	7,029,185	1,179,646	505,752	389,445	220,204	3,966,734	89,156	456,357	221,891
181 Univ of Texas at Dallas	5,749	638	2,019	1,025	289	891	114	543	230
182 Creighton University	5,744	0	0	0	0	5,744	0	0	0
183 Cleveland State Univ	5,677	1,848	343	1	17	170	16	3,282	0
184 Brigham Young University	5,600	1,735	1,305	17	98	962	9	509	965
185 Hahnemann University	5,499i	0i	0i	0i	0i	4,859i	640i	0i	0i
186 Northern Illinois Univ	5,457	315	1,168	175	66	1,067	99	2,056	511
187 Union College (NY)	5,404	1,501i	1,000i	196i	642	502i	345i	1,218i	0i
188 Stevens Institute of Tech	5,187	4,869	246	0	72	0	0	0	0
189 Univ of Missouri Kan City	5,177	0	270	33	1,289	2,648	6	555	376
190 Western Michigan Univ	5,166	1,469	104	1,233	164	312	29	1,850	5
Total, 1st 190 insts.	7,083,845	1,192,021	512,207	392,125	222,841	3,983,889	90,414	466,370	223,978
191 Univ of South Alabama	5,126	82	69	194	5	4,303	64	301	108
192 Howard University	4,977	1,186	281	0	378	2,794	34	304	0
193 Clarkson University	4,896	3,878	829	0	43	134	5	0	7
194 Florida Inst of Tech	4,665	1,464	566	1,001	71	935	13	0	615
195 George Mason University	4,425	2,730	22	45	62	224	174	1,168	0
196 CUNY City College	4,231	2,637	435	106	9	868	154	22	0
197 Oregon Grad Inst Sci/Tech	4,198	1,072	1,369	1,347	410	0	0	0	0
198 University of Montana	4,179	0	212	70	54	2,469	9	602	763
199 San Jose State University	4,122	1,219	466	1,722	109	291	104	211	0
200 University of Tulsa	4,054	3,175	96	24	160	481	26	92	0
Total, 1st 200 insts.	7,128,718	1,209,464	516,552	396,634	224,142	3,996,388	90,997	469,070	225,471
Total, all other sampled insts.	195,049	38,100	28,845	10,056	9,640	75,531	6,018	16,945	7,914
Estimated total non-sampled insts.	75,937	14,241	12,870	8,804	5,021	18,577	2,158	10,785	3,482

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-42. R&D expenditures at public universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
Total, all institutions	11,779,032	1,953,132	1,215,373	850,197	417,037	6,292,071	204,351	560,688	286,183
1 University of Michigan	363,582	63,841	21,419	17,742	13,645	191,582	6,960	41,259	7,134
2 University of Minnesota	331,471	27,460	18,143	12,053	30,917	222,512	7,622	12,188	576
3 Univ of Wis-Madison	326,489	43,341	32,841	21,194	8,137	187,200	9,469	22,608	1,699
4 Texas A & M University	288,005	65,627	17,230	69,272	6,299	111,045	756	8,852	8,924
5 University of Washington	274,423	20,497	15,182	22,771	8,633	172,710	5,256	6,942	22,432
6 Univ of Cal San Francisco	268,700	0	0	0	0	268,700	0	0	0
7 Pennsylvania State Univ	267,816	120,336	16,158	15,536	3,870	86,055	5,768	11,274	8,819
8 Univ of Cal San Diego	261,422	5,624	41,115	70,038	9,801	129,711	2,965	2,168	0
9 Univ of Cal Berkeley	258,038	57,481	55,736	3,619	6,455	104,359	6,548	19,894	3,946
10 Univ of Cal Los Angeles	250,033	25,715	22,407	13,813	7,340	157,174	7,142	16,442	0
Total, 1st 10 insts.	2,889,979	429,922	240,231	246,038	95,097	1,631,048	52,486	141,627	53,530
11 University of Ill Urbana	243,380	54,694	39,511	25,670	20,489	51,838	5,970	10,962	34,246
12 Univ of Texas at Austin	237,043	86,521	59,024	28,919	15,645	18,726	2,608	19,674	5,926
13 University of Arizona	213,726	18,080	64,837	16,176	5,178	97,583	2,263	8,271	1,338
14 Univ of MD College Park	206,432	36,868	69,447	8,232	9,138	72,859	3,339	6,549	0
15 Univ of Cal Davis	200,664	9,634	7,471	894	1,256	178,466	800	2,143	0
16 Ohio State University	194,919	42,950	13,659	5,266	3,469	101,655	558	15,160	12,202
17 Georgia Institute of Tech	176,729	124,708	14,422	5,519	19,321	2,705	1,281	8,491	282
18 University of Georgia	162,992	4,312	8,061	6,625	6,071	114,576	3,526	19,821	0
19 Univ. of Colorado	161,970	21,550	23,171	25,508	5,225	76,518	5,948	4,050	0
20 Louisiana State Univ Sys	151,433	31,768	9,912	16,303	2,361	83,973	876	5,083	1,157
Total, 1st 20 insts.	4,839,267	861,007	549,746	385,150	183,250	2,429,947	79,655	241,831	108,681
21 Rutgers the St Univ of NJ	151,335	24,591	18,379	7,909	13,291	64,588	5,894	14,438	2,245
22 Univ of NC at Chapel Hill	142,681	0	6,965	6,937	9,169	107,075	1,245	11,290	0
23 N C State Univ at Raleigh	142,606	46,343	7,091	6,584	5,814	73,215	137	3,422	0
24 University of Florida	140,257	29,445	10,246	5,270	4,279	83,456	1,493	4,507	1,561
25 Purdue University	136,325	35,130	15,134	2,202	5,897	70,314	1,394	5,883	371
26 Iowa St U of Sci & Tech	134,657	36,768	8,475	605	13,792	62,329	728	8,619	3,341
27 Michigan State University	133,249	15,340 i	22,015 i	1,842 i	504 i	76,581 i	3,081 i	6,948 i	6,938 i
28 University of Pittsburgh	130,322	6,514	10,852	221	1,872	104,112	2,236	3,700	815
29 Univ. Of Tennessee System	128,418	30,817	11,398	9,817	6,959	63,634	379	4,366	1,048
30 VA Polytech Inst & St U	125,256	48,407	9,562	6,294	2,620	52,164	1,253	4,956	0
Total, 1st 30 insts.	6,204,373	1,134,362	669,863	432,831	247,447	3,187,415	97,495	309,960	125,000
31 University of Iowa	124,058	10,805	18,778	494	2,104	86,388	1,141	4,139	209
32 Univ of Massachusetts	119,657	9,717	15,937	6,908	8,920	69,401	3,209	4,908	657
33 University of Connecticut	119,526	21,575	3,409	7,621	2,407	74,000	4,539	4,471	1,504
34 SUNY at Buffalo	113,441	22,881	7,432	580	4,728	69,283	3,681	4,168	688
35 Univ Alabama Birmingham	113,317	4,711	516	66	694	106,472	753	105	0
36 UT MD Anderson Cancer Ctr	108,988	0	4,183	0	2,483	102,322	0	0	0
37 Indiana University	102,461	656	24,147	765	2,514	62,685	3,566	3,955	4,173
38 Univ of Missouri Columbia	96,748	9,937	5,123	1,204	359	72,022	1,211	6,481	411
39 University of Virginia	96,733	17,748	11,476	4,827	4,275	50,807	2,534	4,850	216
40 Oregon State University	96,199	8,226	3,747	21,144	2,001	57,612	63	2,748	658
Total, 1st 40 insts.	7,295,501	1,240,618	764,611	476,440	277,932	3,938,407	118,192	345,785	133,516
41 University of Utah	94,621	15,116	8,859	3,659	4,691	60,708	1,035	553	0
42 UT SW Medical Ctr-Dallas	94,511	0	0	0	0	94,511	0	0	0
43 Utah State University	94,167	44,842	5,030	11,813	502	22,247	1,460	1,068	7,205
44 SUNY at Stony Brook	90,790	2,640	21,466	11,140	4,136	46,642	1,793	2,308	665
45 Univ of Ill Chicago	90,520	7,940	6,783	256	1,959	59,217	977	3,496	9,892
46 Univ of MD Balt Prof Sch	89,811	0	0	0	0	89,811	0	0	0
47 Univ of Nebraska-Lincoln	87,529	12,377	5,135	5,657	1,267	59,898	315	2,808	72
48 Univ of Cal Irvine	82,523	5,171	13,043	147	4,021	55,419	0	3,923	799
49 University of Kentucky	81,137	14,610	2,039	168	598	58,612	187	1,082	3,841
50 University of Cincinnati	80,598	15,961	5,879	268	395	54,707	366	258	2,764
Total, 1st 50 insts.	8,181,708	1,359,275	832,845	509,548	295,501	4,540,179	124,325	361,281	158,754

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-42. R&D expenditures at public universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
51 Colorado State University	80,474	16,406	5,220	9,520	916	39,548	2,476	6,388	0
52 University of Oklahoma	79,777	13,724	5,690	11,009	3,822	33,357	3,501	5,913	2,761
53 New Mexico State Univ	78,736	44,091	3,093	3,069	8,755	18,183	45	1,007	493
54 Univ of Hawaii-Manoa	78,166	1,607	19,762	20,168	312	27,060	229	3,379	5,649
55 Washington State Univ	75,244	6,792	2,114	817	537	51,727	239	8,293	4,725
56 Univ of Med & Dent of N J	73,449	0	0	0	0	73,449	0	0	0
57 Univ of South Florida	72,948	16,945	2,325	6,305	227	44,554	1,783	809	0
58 Clemson University	70,236	18,715	4,097	193	6,420	34,752	214	5,763	82
59 Wayne State University	69,997	5,624	8,896	0	1,055	49,221	1,189	2,042	1,970
60 Auburn University	69,913	22,182	3,900	251	1,008	40,774	172	394	1,232
Total, 1st 60 insts.	8,930,648	1,505,361	887,942	560,880	318,553	4,952,804	134,173	395,269	175,866
61 Oklahoma State University	67,492	13,203	5,102	1,563	1,057	34,743	391	7,968	3,465
62 Univ of Alaska Fairbanks	67,432	3,616	12,818	31,485	208	16,908	0	2,397	0
63 University of New Mexico	67,344	22,083	3,281	1,665	626	29,881	897	5,443	3,468
64 University of Kansas	65,982	4,365	6,648	6,759	301	37,315	1,421	335	8,638
65 Virginia Commonwlth Univ	65,608	120	1,717	0	203	61,605	425	1,538	0
66 Mississippi State Univ	64,335	15,360	2,011	1,427	123	36,510	3	3,736	5,165
67 Arizona State University	63,489	20,129	15,308	5,376	2,268	6,390	2,556	7,489	3,973
68 Univ of Cal Santa Barbara	59,593	20,648	15,069	10,014	3,440	2,787	2,690	4,945	0
69 Univ of Cal Riverside	57,244	40	4,299	1,413	664	49,362	602	864	0
70 Univ of South Carolina	55,091	14,260	5,282	9,786	1,615	15,674	1,898	5,672	904
Total, 1st 70 insts.	9,564,258	1,619,185	959,477	630,368	329,058	5,243,979	145,056	435,656	201,479
71 Temple University	54,921	282	2,458	26	506	38,985	2,874	9,768	22
72 U Tex Hlth Sci Ctr Houstn	53,896	0	0	0	0	53,402	0	494	0
73 Florida State University	53,811	846	12,297	7,452	1,525	6,142	2,361	5,661	17,527
74 Kans St U - Ag & App Sci	53,010	6,635	3,162	240	601	39,863	285	1,325	899
75 U Tex Hlth Sci Ctr S Anto	51,768	0	0	0	0	51,768	0	0	0
76 West Virginia University	49,686	7,005	1,775	5,273	10,144	23,283	97	1,586	523
77 Unif Serv Univ of Hlth Sc	47,096	0	0	0	0	47,096	0	0	0
78 U of VT & State Agr Coll	46,541	997	995	437	316	42,285	1,137	88	286
79 U Tex Med Brnch Galveston	45,086	0	0	0	0	45,086	0	0	0
80 University of Delaware	44,696	12,528	7,996	6,563	2,021	10,762	606	4,220	0
Total, 1st 80 insts.	10,064,769	1,647,478	988,160	650,359	344,171	5,602,651	152,416	458,798	220,736
81 U of Houston	42,292	14,396	16,868	1,145	825	5,253	2,167	1,143	495
82 Univ of Central Florida	41,935	5,418	10,765	7,307	819	1,156	619	378	15,473
83 Oregon Hlth Sciences Univ	41,661	0 i	0 i	0 i	0 i	40,272 i	1,389 i	0 i	0 i
84 Univ of Ark Fayetteville	40,831	5,710	4,114	792	1,284	24,756	554	2,569	1,052
85 University of Idaho	39,407	8,031	1,849	1,961	51	24,828	37	1,865	785
86 Univ of Rhode Island	38,842	4,708	957	17,442	234	9,796	2,646	2,269	790
87 SUNY Hlth Sci Ctr - Syrcs	37,294	0	0	0	0	37,294	0	0	0
88 Texas Tech University	34,994	8,902	3,276	687	768	17,260	105	3,299	697
89 SUNY Hlth Sci Ctr - Brkln	32,824	0	0	0	0	32,824	0	0	0
90 Univ of P R-Mayaguez	31,938 i	1,673 i	174 i	1,459 i	30 i	28,448 i	23 i	0 i	131 i
Total, 1st 90 insts.	10,446,787	1,696,316	1,026,163	681,152	348,182	5,824,538	159,956	470,321	240,159
91 Univ of Cal Santa Cruz	31,620	373	14,582	6,836	1,090	7,053	762	924	0
92 Montana State University	30,278	4,330	3,554	469	315	20,272	12	1,326	0
93 Univ of New Hampshire	29,591	3,098	918	15,375	457	6,301	134	1,991	1,317
94 Univ of Nevada - Reno	29,303	3,465	1,165	4,132	28	11,816	57	1,603	7,037
95 San Diego State Univ	28,570	4,466	1,054	581	1,960	12,518	2,181	1,457	4,353
96 Southern Ill U-Carbondale	28,340	5,134	993	456	2,487	12,578	620	1,315	4,757
97 U of Neb Med Ctr at Omaha	27,858	0	0	0	0	27,858	0	0	0
98 Univ Alabama Huntsville	27,499	12,781	7,768	923	4,245	299	8	156	1,319
99 Univ of Maine Orono	27,082	3,724	685	5,107	66	15,586	292	1,622	0
100 University of Oregon	26,151	939	11,004	2,758	733	7,271	2,043	1,282	121
Total, 1st 100 insts.	10,733,079	1,734,626	1,067,886	717,789	359,563	5,946,090	166,065	481,997	259,063

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-42. R&D expenditures at public universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
101 Med Univ of S. Carolina	25,877	0	0	0	0	25,877	0	0	0
102 University of Mississippi	24,748	2,762	5,899	0	16	15,195	267	609	0
103 University of Wyoming	23,009	2,603	2,005	3,460	448	12,558	339	88	1,508
104 The University of Alabama	21,248	5,996	4,516	1,992	2,118	2,560	894	2,620	552
105 SUNY at Albany	20,580	0	2,701	7,556	836	2,844	2,947	3,696	0
106 Michigan Tech University	19,667	12,326	1,633	435	201	3,072	0	1,204	796
107 Univ of Nevada, Las Vegas	19,491	604	475	5,387	11,199	541	24	840	421
108 US Naval Postgrad School	19,397	6,599	2,282	3,426	2,030	0	0	3,490	1,570
109 SUNY Col of Env Sci & For	19,049	7,139	1,411	1,864	299	7,892	0	444	0
110 Florida A & M University	18,552	2,797	2,034	0	35	13,686	0	0	0
Total, 1st 110 insts.	10,944,697	1,775,452	1,090,842	741,909	376,745	6,030,315	170,536	494,988	263,910
111 College of William & Mary	18,508	0	3,542	12,784	1,009	702	190	281	0
112 Desert Research Institute	17,948	0	0	14,043	0	1,928	0	1,977	0
113 University of N Dakota	16,995	8,361	31	2,674	0	4,137	10	1,060	722
114 Univ of Wis-Milwaukee	16,865	2,998	3,021	2,741	146	3,046	497	3,392	1,024
115 University of Louisville	16,852	1,207	853	372	108	12,762	1	1,549	0
116 N Mex Inst Mining & Tech	16,770e	11,239i	1,611i	3,663i	154i	103i	0i	0i	0i
117 N J Inst of Technology	16,463	6,614	397	5,548	698	0	0	133	3,073
118 U of MD Center For EES	16,205	0	0	16,205	0	0	0	0	0
119 CUNY City College	15,451	4,834	5,879	281	248	3,301	340	101	467
120 Wright State University	14,646	2,408	2,362	288	1,255	7,696	502	135	0
Total, 1st 120 insts.	11,111,400	1,813,113	1,108,538	800,508	380,363	6,063,990	172,076	503,616	269,196
121 Univ of Missouri Rolla	14,432	10,286	2,241	456	386	136	18	11	898
122 U of Arkansas Med Sci Cam	14,250	0	0	0	0	14,250	0	0	0
123 North Dakota State Univ	13,821	1,902	1,662	57	396	8,355	154	1,041	254
124 University of Akron	13,405	5,197	6,357	89	528	370	306	558	0
125 Colorado School of Mines	12,971	8,648	1,716	737	1,325	0	0	545	0
126 Univ of South Alabama	12,924	120	124	362	11	11,205	337	657	108
127 Univ of Tex at Arlington	12,887	8,240	2,313	401	980	599	99	182	73
128 Ohio University	12,796	6,678	1,304	151	33	4,170	334	126	0
129 University of Lowell	12,403	3,925	3,266	135	730	2,699	6	19	1,623
130 San Jose State University	12,100	3,114	1,135	4,433	185	337	2,594	302	0
Total, 1st 130 insts.	11,243,389	1,861,223	1,128,656	807,329	384,937	6,106,111	175,924	507,057	272,152
131 Medical Col of Georgia	12,082	0	0	0	0	12,082	0	0	0
132 Memphis State University	12,000	1,397	322	3,047	476	2,167	2,716	1,875	0
133 South Dakota State Univ	11,511	674	197	887	0	9,138	0	615	0
134 Univ of North Texas	10,580	502	2,479	1,674	1,854	1,919	274	855	1,023
135 Univ of Texas at Dallas	10,571	738	5,058	1,424	379	1,942	216	584	230
136 NC Ag & Tech State Univ	10,427	5,753	346	0	571	3,535	122	100	0
137 Univ of Southwestern LA	10,232	2,037	1,444	122	3,402	1,751	111	759	606
138 Cleveland State Univ	10,205	4,410	964	1	48	456	16	4,310	0
139 Northern Illinois Univ	10,074	600	1,850	405	269	2,794	266	3,379	511
140 Old Dominion U Res Fdn	10,040	3,758	1,181	1,642	1,080	2,317	62	0	0
Total, 1st 140 insts.	11,351,111	1,881,092	1,142,497	816,531	393,016	6,144,212	179,707	519,534	274,522
141 Tenn Technological Univ	9,888	8,242	347	17	207	1,047	0	28	0
142 SUNY at Binghamton	9,870	1,014	2,172	618	537	1,438	2,225	1,866	0
143 Univ of Texas at El Paso	9,447	3,922	1,379	546	622	1,494	459	1,025	0
144 Med Col of Ohio at Toledo	9,353	0	0	0	0	9,353	0	0	0
145 Georgia State University	9,271	0	2,307	149	595	1,889	2,267	1,597	467
146 George Mason University	8,469	5,109	210	45	334	410	541	1,820	0
147 Kent State University	8,469	150	4,681	238	1,079	981	932	246	162
148 Univ of Missouri Kan City	8,300	0	424	87	1,289	5,544	6	574	376
149 CUNY Hunter College	8,075	0	2,841	504	232	3,044	903	525	26
150 University of Montana	7,871	0	324	117	170	5,143	64	1,290	763
Total, 1st 150 insts.	11,440,124	1,899,529	1,157,182	818,852	398,081	6,174,555	187,104	528,505	276,316
Total, all other sampled insts.	229,307	30,881	42,140	13,915	11,361	96,362	7,033	19,909	7,706
Estimated total non-sampled insts.	109,601	22,722	16,051	17,430	7,595	21,154	10,214	12,274	2,161

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-43. Federally financed R&D expenditures at public universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
Total, all institutions	6,046,980	957,327	778,638	478,950	241,794	3,172,429	132,498	183,090	102,254
1 University of Washington	221,124	12,912	12,098	21,133	7,992	137,829	4,543	3,844	20,773
2 University of Michigan	206,276	36,653	13,067	12,631	8,323	117,241	3,391	13,963	1,007
3 Univ of Cal San Diego	200,451	3,140	36,411	47,954	5,202	105,192	2,163	389	0
4 Univ of Cal San Francisco	190,936	0	0	0	0	190,936	0	0	0
5 Univ of Wis-Madison	183,652	25,715	24,321	14,109	5,592	95,697	7,452	10,684	82
6 Univ of Cal Los Angeles	167,885	19,259	20,161	9,763	5,841	105,228	5,199	2,434	0
7 University of Minnesota	164,887	10,524	12,595	2,568	27,230	102,774	4,992	4,204	0
8 Pennsylvania State Univ	146,212	78,021	10,095	7,245	2,383	39,322	3,319	4,194	1,633
9 Univ of Cal Berkeley	140,261	29,047	47,227	2,334	5,059	45,570	4,195	6,485	344
10 Univ. of Colorado	119,068	13,920	17,886	20,470	3,802	56,353	3,999	2,638	0
Total, 1st 10 insts.	1,740,752	229,191	193,861	138,207	71,424	996,142	39,253	48,835	23,839
11 University of Ill Urbana	118,748	29,347	31,456	5,712	10,487	23,033	3,557	2,967	12,189
12 Univ of Texas at Austin	113,192	43,157	35,841	10,558	5,961	10,492	1,987	3,691	1,505
13 Univ of NC at Chapel Hill	103,485	0	5,840	3,123	5,916	81,066	1,134	6,406	0
14 University of Arizona	101,818	7,394	33,633	4,964	3,504	48,095	1,253	1,915	1,060
15 Georgia Institute of Tech	101,476	71,606	8,281	3,169	11,093	1,554	735	4,876	162
16 University of Pittsburgh	99,932	3,179	8,527	200	1,264	82,844	1,811	1,339	768
17 Texas A & M University	97,727	12,826	8,616	47,120	2,580	23,178	482	1,531	1,394
18 Ohio State University	88,542	15,849	8,780	3,481	2,410	45,241	305	11,190	1,286
19 University of Iowa	81,007	4,102	14,983	146	641	59,198	707	1,230	0
20 Univ of Cal Davis	79,961	5,293	6,500	732	472	65,716	720	528	0
Total, 1st 20 insts.	2,726,640	421,944	356,318	217,412	115,752	1,436,559	51,944	84,508	42,203
21 Univ of MD College Park	77,866	16,331	35,925	5,064	5,034	10,357e	1,125	4,030	0
22 Univ Alabama Birmingham	76,317	571	388	1	254	74,489	536	78	0
23 SUNY at Buffalo	68,945	7,579	4,332	458	3,525	50,923	1,335	521	272
24 University of Utah	68,769	9,070	6,982	2,154	3,450	45,910	940	263	0
25 Purdue University	67,810	19,814	11,732	1,546	4,437	27,515	978	1,419	369
26 Univ of Massachusetts	67,665	4,895	8,707	1,768	6,190	42,313	2,548	973	271
27 University of Florida	66,777	13,936	5,790	1,915	2,680	39,875	834	1,303	444
28 Univ. Of Tennessee System	63,575	15,411	6,284	6,357	4,386	29,582	297	1,258	0
29 Indiana University	61,831	126	18,712	454	1,587	36,076	2,605	823	1,448
30 Utah State University	61,762	40,709	3,033	5,607	217	9,326	1,154	248	1,468
Total, 1st 30 insts.	3,407,957	550,386	458,203	242,736	147,512	1,802,925	64,296	95,424	48,475
31 Michigan State University	61,646	5,211i	15,337i	783i	396i	31,781i	1,851i	3,270i	3,017i
32 University of Virginia	61,060	10,565	8,829	4,208	3,270	31,761	2,207	150	70
33 SUNY at Stony Brook	58,977	1,929	14,839	6,816	2,788	30,230	1,428	926	21
34 UT SW Medical Ctr-Dallas	57,746	0	0	0	0	57,746	0	0	0
35 New Mexico State Univ	57,522	37,980	2,383	2,200	6,680	7,728	21	448	82
36 Louisiana State Univ Sys	57,033	18,351	4,758	5,829	566	26,470	594	464	1
37 Colorado State University	55,689	11,117	3,960	8,082	577	26,232	2,123	3,598	0
38 Univ of Cal Irvine	52,652	2,752	12,106	0	3,015	32,290	0	1,737	752
39 Oregon State University	51,099	4,263	2,579	17,962	1,078	24,112	60	855	190
40 Rutgers the St Univ of NJ	48,822	6,863	9,458	945	6,886	16,372	2,522	5,776	0
Total, 1st 40 insts.	3,970,203	649,417	532,452	289,561	172,768	2,087,647	75,102	112,648	50,608
41 VA Polytech Inst & St U	47,866	24,273	4,480	3,487	1,203	12,257	730	1,436	0
42 University of Cincinnati	47,445	7,903	3,235	172	151	34,159	163	86	1,576
43 N C State Univ at Raleigh	46,894	17,192	3,092	3,276	2,227	20,177	54	876	0
44 Univ of Cal Santa Barbara	46,647	16,677	13,422	7,036	2,429	1,975	1,931	3,177	0
45 University of Connecticut	46,156	2,649	957	4,762	593	34,516	2,406	216	57
46 University of Georgia	45,019	519	3,184	1,652	2,282	34,728	1,090	1,564	0
47 Virginia Commonwlth Univ	44,974	0	1,230	0	179	42,929	337	299	0
48 Univ of Hawaii-Manoa	44,857	796	14,637	15,095	278	10,419	159	355	3,118
49 Univ of MD Balt Prof Sch	43,682	0	0	0	0	43,682	0	0	0
50 Univ of Ill Chicago	43,096	2,566	3,800	117	1,366	30,762	729	555	3,201
Total, 1st 50 insts.	4,426,839	721,992	580,489	325,158	183,476	2,353,251	82,701	121,212	58,560

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-43. Federally financed R&D expenditures at public universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
51 Iowa St U of Sci & Tech	42,793	12,747	2,797	143	6,670	17,328	146	2,647	315
52 Univ of Med & Dent of N J	38,768	0	0	0	0	38,768	0	0	0
53 Univ of Alaska Fairbanks	34,335	649	8,540	19,382	122	5,355	0	287	0
54 U Tex Hlth Sci Ctr Houstn	32,778	0	0	0	0	32,301	0	477	0
55 U Tex Hlth Sci Ctr S Anto	32,770	0	0	0	0	32,770	0	0	0
56 UT MD Anderson Cancer Ctr	32,314	0	1,966	0	1,012	29,336	0	0	0
57 Washington State Univ	32,257	2,774	1,737	605	300	20,302	92	2,075	4,372
58 University of Kentucky	31,636	3,858	1,557	40	511	23,700	178	785	1,007
59 U of VT & State Agr Coll	30,860	522	727	175	219	28,356	805	2	54
60 Wayne State University	30,583	2,009	1,949	0	112	25,323	822	338	30
Total, 1st 60 insts.	4,765,933	744,551	599,762	345,503	192,422	2,606,790	84,744	127,823	64,338
61 University of New Mexico	30,141	11,226	2,014	937	219	13,297	730	961	757
62 Oregon Hlth Sciences Univ	28,897	0i	0i	0i	0i	27,744i	1,153i	0i	0i
63 Temple University	28,873	123	1,253	4	225	20,532	1,749	4,987	0
64 Florida State University	28,495	111	5,940	4,652	650	3,414	1,301	489	11,938
65 Univ of Nebraska-Lincoln	27,499	1,450	3,189	1,771	548	19,845	218	431	47
66 Univ of Missouri Columbia	27,463	2,167	1,540	401	298	20,858	754	1,445	0
67 University of Kansas	26,419	2,230	2,559	558	234	15,655	745	2	4,436
68 Arizona State University	26,246	5,400	7,056	4,922	1,199	4,002	1,780	1,863	24
69 University of Oklahoma	25,786	5,088	2,100	2,427	1,032	9,971	1,502	2,637	1,029
70 Mississippi State Univ	25,751	10,243	1,369	699	123	11,033	3	1,077	1,204
Total, 1st 70 insts.	5,041,503	782,589	626,782	361,874	196,950	2,753,141	94,679	141,715	83,773
71 Univ of Rhode Island	23,980	2,390	598	14,209	148	2,560	2,232	1,508	335
72 Univ of South Florida	23,578	10,343	1,436	2,961	143	7,761	545	389	0
73 Univ of South Carolina	23,084	4,297	3,438	2,962	636	8,352	1,252	1,735	412
74 U Tex Med Brnch Galveston	20,974	0	0	0	0	20,974	0	0	0
75 Univ Alabama Huntsville	20,363	9,175	6,322	629	2,807	233	4	117	1,076
76 U of Houston	20,140	3,694	10,125	347	436	2,916	1,620	629	373
77 University of Delaware	20,053	4,561	5,205	4,185	1,574	2,370	486	1,672	0
78 West Virginia University	19,582	3,492	746	3,713	389	10,567	70	130	475
79 University of Oregon	19,311	611	7,952	2,209	551	6,062	1,380	546	0
80 US Naval Postgrad School	19,264	6,504	2,279	3,423	1,998	0	0	3,490	1,570
Total, 1st 80 insts.	5,251,832	827,656	664,883	396,512	205,632	2,814,936	102,268	151,931	88,014
81 Univ of New Hampshire	18,516	1,558	855	11,745	305	2,716e	132	1,205	0
82 SUNY Hlth Sci Ctr - Brkln	17,949	0	0	0	0	17,949	0	0	0
83 Univ of Nevada, Las Vegas	17,568	553	228	4,731	11,159	379	0	251	267
84 University of Mississippi	16,937	2,229	4,966	0	7	9,132	242	361	0
85 San Diego State Univ	16,744	3,385	723	420	1,262	7,364	2,046	755	789
86 Clemson University	16,594	5,134	1,117	87	1,145	7,693	8	1,400	10
87 Univ of Cal Riverside	16,031	40	4,068	758	349	10,382	380	54	0
88 Univ of Cal Santa Cruz	15,805	0	6,507	4,089	644	3,572	640	353	0
89 Oklahoma State University	15,756	6,027	1,777	60	297	6,625	152	748	70
90 Kans St U - Ag & App Sci	15,726	1,615	2,766	152	176	10,404	111	283	219
Total, 1st 90 insts.	5,419,458	848,197	687,890	418,554	220,976	2,891,152	105,979	157,341	89,369
91 Florida A & M University	15,592	1,610	1,916	0	0	12,066	0	0	0
92 Auburn University	15,279	6,646	1,351	153	351	5,843	71	5	859
93 University of Idaho	15,149	4,597	738	624	28	8,523	14	510	115
94 Univ of P R-Mayaguez	14,613i	1,083i	174i	1,275i	21i	11,987i	0i	0i	73i
95 University of N Dakota	14,470	7,740	10	2,153	0	3,594	0	537	436
96 Med Univ of S. Carolina	14,367	0	0	0	0	14,367	0	0	0
97 Unif Serv Univ of Hlth Sc	12,846	0	0	0	0	12,846	0	0	0
98 University of Wyoming	12,782	2,019	1,791	1,798	399	6,041	330	62	342
99 Univ of Ark Fayetteville	12,371	2,457	1,407	208	224	7,506	0	361	208
100 SUNY at Albany	12,204	0	1,780	3,136	464	2,031	2,128	2,665	0
Total, 1st 100 insts.	5,559,131	874,349	697,057	427,901	222,463	2,975,956	108,522	161,481	91,402
Total, all other sampled insts.	439,270	73,264	73,547	41,686	16,226	189,504	15,192	18,999	10,852
Estimated total non-sampled insts.	48,579	9,714	8,034	9,363	3,105	6,969	8,784	2,610	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-44. R&D expenditures at private universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
Total, all institutions	5,841,177	939,617	721,485	269,706	356,922	3,200,833	89,089	185,299	78,225
1 Johns Hopkins Univ	710,095	216,567	118,842	39,546	87,402	222,541	1,243	10,425	13,529
2 Mass Inst of Technology	318,901	132,421	101,286	12,580	15,963	34,398	7,481	3,461	11,311
3 Stanford University	310,429	92,089	58,283	2,496	11,917	138,102	3,583	3,959	0
4 Cornell University	309,535	43,632	45,572	6,496	27,194	171,008	3,514	11,865	254
5 Harvard University	229,939	2,346	25,868	7,499	3,753	144,264	2,302	39,711	4,196
6 Univ of Pennsylvania	198,221	10,620	18,260	203	7,804	143,981	1,516	13,484	2,353
7 Columbia Univ Main Div	194,666	16,785	16,929	29,777	4,906	119,235	1,653	5,381	0
8 Yale University	193,893	7,329	18,737	2,359	5,328	153,527	3,710	2,903	0
9 Univ of Southern Cal	175,595	24,010	7,349	7,798	34,260	87,695	9,776	4,599	108
10 Duke University	164,232	6,512	10,690	2,797	2,396	133,314	2,131	6,392	0
Total, 1st 10 insts.	2,805,506	552,311	421,816	111,551	200,923	1,348,065	36,909	102,180	31,751
11 Baylor Col of Medicine	161,084	0	0	0	0	161,084	0	0	0
12 Washington University	160,464	2,953	6,217	1,987	5,923	141,528	735	1,121	0
13 Northwestern University	144,809	19,603	11,847	730	4,229	79,551	1,191	1,574	26,084
14 University of Rochester	131,777	22,304	12,045	367	1,763	89,004	5,062	902	330
15 University of Chicago	117,344	0	24,551	4,948	2,975	79,961	1,725	3,184	0
16 California Inst of Tech	115,526	17,931	47,728	16,627	5,719	26,275	0	444	802
17 New York University	112,106	0	4,535	67	10,557	87,436	3,458	5,024	1,029
18 Case Western Reserve Univ	104,199	23,770	5,146	407	249	71,887	343	2,397	0
19 Carnegie-Mellon Univ	103,030	24,615	6,760	2,127	46,912	12,568	4,232	4,276	1,540
20 University of Miami	96,979	1,643	1,258	19,149	282	70,868	1,102	2,451	226
Total, 1st 20 insts.	4,052,824	665,130	541,903	157,960	279,532	2,168,227	54,757	123,553	61,762
21 Princeton University	92,002	20,134	23,478	6,974	8,103	18,513	5,238	9,562	0
22 Emory University	91,940	0	5,407	48	238	82,778	720	2,749	0
23 Yeshiva University	86,721	0	0	0	0	86,721	0	0	0
24 Vanderbilt University	80,759	8,554	6,646	132	710	59,736	1,898	3,083	0
25 Woods Hole Ocngrphic Inst	76,979e	12,165i	0i	64,814i	0i	0i	0i	0i	0i
26 Boston University	74,881	4,677	9,359	169	1,750	53,665	434	1,446	3,381
27 Rockefeller University	74,090	0	9,031	0	507	64,552	0	0	0
28 Tulane University	71,781	4,317	1,734	139	759	55,581	473	7,527	1,251
29 CUNY Mt Sinai Sch of Med	66,310	0	0	0	0	66,310	0	0	0
30 Georgetown University	60,454	0	5,253	378	1,105	50,375	72	3,251	20
Total, 1st 30 insts.	4,828,741	714,977	602,811	230,614	292,704	2,706,458	63,592	151,171	66,414
31 Rensselaer Polytech Inst	50,106	37,927	5,256	1,177	2,849	1,044	146	441	1,266
32 Brown University	49,503	9,936	6,907	5,241	7,303	17,979	1,502	635	0
33 Dartmouth College	49,384	5,078	2,150	1,163	749	35,637	347	264	3,996
34 Tufts University	47,748	2,307	1,401	3,565	94	38,493	781	1,107	0
35 Wake Forest University	44,214	0	702	0	79	43,223	0	5	205
36 Medical College of Wis	40,446	0	0	0	0	40,446	0	0	0
37 University of Dayton	37,925	33,660	1,035	200	1,555	371	885	219	0
38 Brandeis University	33,837	0	3,596	0	911	15,608	1,345	12,377	0
39 Thomas Jefferson Univ	33,066	0	0	0	0	33,066	0	0	0
40 Syracuse University	30,606	5,255	5,169	1,250	9,688	5,106	472	3,634	32
Total, 1st 40 insts.	5,245,576	809,140	629,027	243,210	315,932	2,937,431	69,070	169,853	71,913
41 Rice University	30,577	4,304	9,274	2,685	10,261	3,373	409	271	0
42 George Washington Univ	29,791	5,123	933	104	5,898	16,988	202	442	101
43 Lehigh University	27,912	20,185	4,995	413	616	843	246	614	0
44 Rush University	27,359	0	0	0	0	25,341	2,018	0	0
45 The Medical Col of Penna	24,645	0	0	0	0	24,645	0	0	0
46 Loyola Univ - Chicago	22,702	0	385	0	431	21,229	187	468	2
47 University of Notre Dame	21,302	6,583	10,306	161	390	3,366	207	118	171
48 Drexel University	19,705	12,506	2,558	800	911	1,446	141	1,343	0
49 St Louis University	19,183	0	0	652	33	18,493	0	0	5
50 Northeastern University	15,973	5,925	3,442	359	1,694	3,447	701	370	35
Total, 1st 50 insts.	5,484,725	863,766	660,920	248,384	336,166	3,056,602	73,181	173,479	72,227

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-44. R&D expenditures at private universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
51 Howard University	15,731	3,871	1,768	0	2,636	6,508	238	710	0
52 New York Medical College	14,633	0	0	0	0	14,633	0	0	0
53 Hahnemann University	13,536i	0i	0i	0i	0i	12,080i	1,456i	0i	0i
54 Brigham Young University	12,682	5,358	2,618	110	258	2,408	15	602	1,313
55 Oregon Grad Inst Sci/Tech	11,160	2,948	3,726	2,598	1,888	0	0	0	0
56 Eastern VA Medical School	11,112	0	0	0	0	11,112	0	0	0
57 Albany Medical College	10,131	0	0	0	0	10,131	0	0	0
58 Boston College	9,810	0	3,084	439	5,222	722	78	265	0
59 Polytechnic University	9,272	6,683	2,438	0	66	0	0	0	85
60 Clarkson University	9,125	6,370	1,833	0	436	404	75	0	7
Total, 1st 60 insts.	5,601,917	888,996	676,387	251,531	346,672	3,114,600	75,043	175,056	73,632
61 Clark Atlanta University	8,655	0	3,556	1,922	0	3,177	0	0	0
62 Southern Methodist Univ	8,607	922	864	3,991	652	680	184	113	1,201
63 Creighton University	8,324	0	0	0	0	8,324	0	0	0
64 Stevens Institute of Tech	8,303	7,469	737	0	97	0	0	0	0
65 Mercer University	8,172	7,184	0	0	0	988	0	0	0
66 Inst Paper Sci and Tech	7,887	4,595	1,919	0	566	807	0	0	0
67 Catholic Univ of America	7,365	1,443	4,362	0	0	758	493	309	0
68 Meharry Medical College	7,249	0	0	0	0	7,249	0	0	0
69 Illinois Inst of Tech	7,128	5,093	938	741	229	56	71	0	0
70 Chas R Drew U of Med & Sc	7,043	0	0	0	0	7,043	0	0	0
Total, 1st 70 insts.	5,680,650	915,702	688,763	258,185	348,216	3,143,682	75,791	175,478	74,833
71 University of Denver	6,484	240	3,358	38	11	468	2,319	50	0
72 Florida Inst of Tech	6,305	1,696	603	1,133	322	1,655	207	0	689
73 Morehouse School of Med	6,291	0i	0i	0i	0i	6,291i	0i	0i	0i
74 Loma Linda University	6,191	0	0	0	0	6,191	0	0	0
75 Worcester Poly Institute	5,889	4,397	485	0	567	411	0	18	11
76 Union College (NY)	5,861	1,539	1,094	196	688	781	345	1,218	0
77 University of Tulsa	5,318	3,570	234	161	205	856	200	92	0
78 American University	5,057	0	1,403	0	131	1,537	183	1,803	0
79 U Hlth Sci/Chcgo Med Sch	4,908	0	0	0	0	4,584	324	0	0
80 Tuskegee University	4,426	644e	227	0	0	3,512e	0	43	0
Total, 1st 80 insts.	5,737,380	927,788	698,167	259,713	350,140	3,169,968	79,369	178,702	75,533
81 Alfred University	3,911	3,911	0	0	0	0	0	0	0
82 Marquette University	3,821	1,375	446	0	195	1,171	163	243	228
83 Hampton University	3,345	259	2,396	200	490	0	0	0	0
84 Wesleyan University	3,248e	0i	1,217i	36i	546i	1,338i	84i	27i	0i
85 New York Inst Technology	2,900e	698i	268i	0i	1,396i	538i	0i	0i	0i
86 Texas Christian Univ	2,859	0	854	16	15	216	1,731	27	0
87 Bryn Mawr College	2,490	0	896	241	185	406	40	722	0
88 Xavier University of LA	2,424	0	531	0	0	1,893	0	0	0
89 Institute of Textile Tech	2,148	1,439	329	120	260	0	0	0	0
90 Fordham University	1,816	0	163	4	53	593	1	1,002	0
Total, 1st 90 insts.	5,766,342	935,470	703,267	260,330	353,280	3,176,123	81,388	180,723	75,761
91 Amherst College	1,751	0	701	179	54	595	9	50	163
92 Nova University	1,667	0	78	1,322	0	0	248	9	10
93 Santa Clara University	1,579	644	254	0	185	283	8	205	0
94 Occidental College	1,570	0	264	47	23	1,080	40	116	0
95 Villanova University	1,461	479	221	0	101	406	145	109	0
96 Wentworth Inst of Tech	1,460	0	0	1,460	0	0	0	0	0
97 University of Detroit	1,450	1,003i	153i	0i	0i	86i	109i	39i	60i
98 Smith College	1,392i	0i	188i	186i	122i	303i	157i	436i	0i
99 Chicago Col of Osteo Med	1,372	0	0	0	0	1,372	0	0	0
100 Ponce School of Medicine	1,372	0	0	0	0	1,372	0	0	0
Total, 1st 100 insts.	5,781,416	937,596	705,126	263,524	353,765	3,181,620	82,104	181,687	75,994
Total, all other sampled insts.	29,084	768	6,853	1,127	1,471	10,707	5,049	2,404	705
Estimated total non-sampled insts.	30,677	1,253	9,506	5,055	1,686	8,506	1,936	1,208	1,528

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-45. Federally financed R&D expenditures at private universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
Total, all institutions	4,173,524	673,617	599,953	225,460	293,362	2,229,979	61,769	64,097	25,287
1 Johns Hopkins Univ	641,239	211,994	117,022	36,233	87,197	177,528	948	5,409	4,908
2 Stanford University	242,340	73,304	50,320	2,009	9,766	102,844	2,703	1,394	0
3 Mass Inst of Technology	237,667	87,421	84,110	10,160	11,317	33,289	6,720	1,285	3,365
4 Cornell University	173,478	24,456	35,556	3,824	21,959	84,208	1,558	1,902	15
5 Columbia Univ Main Div	163,561	10,828	15,341	29,006	4,049	99,324	1,536	3,477	0
6 Harvard University	156,014	2,045	22,080	6,273	3,333	105,772	1,652	10,922	3,937
7 Yale University	149,506	4,603	16,599	1,648	4,722	119,459	1,705	770	0
8 Univ of Pennsylvania	144,451	6,960	15,434	129	6,950	107,024	1,467	4,324	2,163
9 Univ of Southern Cal	132,230	19,446	7,168	6,294	31,869	58,538	6,753	2,158	4
10 Duke University	114,879	4,948	9,007	1,883	1,794	92,290	2,074	2,883	0
Total, 1st 10 insts.	2,155,365	446,005	372,637	97,459	182,956	980,276	27,116	34,524	14,392
11 Washington University	112,475	1,421	5,195	1,390	3,376	99,744	493	856	0
12 University of Rochester	106,874	19,284	11,243	245	1,622	71,086	2,457	791	146
13 California Inst of Tech	100,820	15,677	43,033	15,811	5,006	20,485	0	300	508
14 University of Chicago	93,993	0	22,339	3,249	2,593	64,241	960	611	0
15 New York University	81,896	0	3,963	36	9,331	64,335	3,078	577	576
16 Baylor Col of Medicine	78,752	0	0	0	0	78,752	0	0	0
17 Case Western Reserve Univ	76,390	15,564	3,735	257	240	55,712	233	649	0
18 Vanderbilt University	71,021	5,908	5,846	129	575	54,887	1,489	2,187	0
19 University of Miami	69,847	823	1,222	16,288	260	48,164	1,029	2,047	14
20 Yeshiva University	67,831	0	0	0	0	67,831	0	0	0
Total, 1st 20 insts.	3,015,264	504,682	469,213	134,864	205,959	1,605,513	36,855	42,542	15,636
21 Woods Hole Ocngrphic Inst	67,154e	10,461i	0i	56,693i	0i	0i	0i	0i	0i
22 Carnegie-Mellon Univ	65,290	14,021	5,513	69	34,902	5,197	3,166	2,121	301
23 Northwestern University	62,718	10,294	8,748	585	2,246	35,117	916	366	4,446
24 Emory University	60,586	0	4,163	0	199	55,188	587	449	0
25 Boston University	60,166	3,124	8,253	63	1,750	44,027	337	502	2,110
26 Princeton University	52,335	10,283	17,249	4,404	5,927	10,891	2,518	1,063	0
27 CUNY Mt Sinai Sch of Med	42,035	0	0	0	0	42,035	0	0	0
28 Georgetown University	41,597	0	4,146	323	905	33,957	61	2,188	17
29 Tufts University	39,113	1,797	1,179	3,397	94	31,624	723	299	0
30 Rockefeller University	36,759	0	4,149	0	39	32,571	0	0	0
Total, 1st 30 insts.	3,543,017	554,662	522,613	200,398	252,021	1,896,120	45,163	49,530	22,510
31 Tulane University	36,713	1,405	587	123	263	30,518	211	3,004	602
32 Brown University	35,571	7,144	4,480	4,204	4,420	13,775	1,123	425	0
33 Dartmouth College	34,317	3,920	1,571	382	541	27,563	218	21	101
34 Wake Forest University	33,385	0	473	0	72	32,811	0	0	29
35 University of Dayton	31,132	27,703	669	135	1,519	186	872	48	0
36 Medical College of Wis	25,062	0	0	0	0	25,062	0	0	0
37 George Washington Univ	23,715	3,735	804	93	5,590	13,185	104	134	70
38 Rensselaer Polytech Inst	23,372	17,692	2,452	548	1,329	487	68	206	590
39 Thomas Jefferson Univ	23,100	0	0	0	0	23,100	0	0	0
40 Rice University	22,838	2,354	7,199	1,683	8,704	2,274	355	269	0
Total, 1st 40 insts.	3,832,222	618,615	540,848	207,566	274,459	2,065,081	48,114	53,637	23,902
41 Brandeis University	21,280	0	2,718	0	714	11,542	1,178	5,128	0
42 St Louis University	16,358	0	0	646	32	15,680	0	0	0
43 The Medical Col of Penna	14,960	0	0	0	0	14,960	0	0	0
44 Loyola Univ - Chicago	14,703	0	332	0	431	13,720	11	209	0
45 Syracuse University	14,192	1,563	3,732	656	2,556	4,580	366	739	0
46 University of Notre Dame	13,587	2,764	8,643	36	357	1,487	145	94	61
47 Lehigh University	11,870	7,703	2,605	240	172	524	157	469	0
48 New York Medical College	11,056	0	0	0	0	11,056	0	0	0
49 Howard University	10,754	2,685	1,487	0	2,258	3,714	204	406	0
50 Northeastern University	9,961i	3,531i	2,209i	0i	1,101i	2,568i	448i	69i	35i
Total, 1st 50 insts.	3,970,943	636,861	562,574	209,144	282,080	2,144,912	50,623	60,751	23,998

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-45. Federally financed R&D expenditures at private universities and colleges, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
51 Boston College	8,673	0	2,901	406	4,529	692	24	121	0
52 Hahnemann University	8,037i	0i	0i	0i	0i	7,221i	816i	0i	0i
53 Drexel University	7,559	4,957	1,348	584	95	521	0	54	0
54 Eastern VA Medical School	7,093	0	0	0	0	7,093	0	0	0
55 Brigham Young University	7,082	3,623	1,313	93	160	1,446	6	93	348
56 Meharry Medical College	7,014	0	0	0	0	7,014	0	0	0
57 Rush University	7,010	0	0	0	0	6,174	836	0	0
58 Oregon Grad Inst Sci/Tech	6,962	1,876	2,357	1,251	1,478	0	0	0	0
59 Clark Atlanta University	6,538	0	2,588	1,073	0	2,877	0	0	0
60 Mercer University	6,388	6,261	0	0	0	127	0	0	0
Total, 1st 60 insts.	4,043,299	653,578	573,081	212,551	288,342	2,178,077	52,305	61,019	24,346
61 Catholic Univ of America	6,301	1,399	3,639	0	0	667	486	110	0
62 Albany Medical College	6,291	0	0	0	0	6,291	0	0	0
63 Southern Methodist Univ	5,966	176	197	3,886	439	611	176	63	418
64 Polytechnic University	5,600	4,140	1,360	0	60	0	0	0	40
65 Chas R Drew U of Med & Sc	5,311	0	0	0	0	5,311	0	0	0
66 Morehouse School of Med	5,020i	0i	0i	0i	0i	5,020i	0i	0i	0i
67 University of Denver	4,799i	188i	2,610i	0i	0i	370i	1,581i	50i	0i
68 American University	4,426	0	1,231	0	119	1,503	183	1,390	0
69 Clarkson University	4,229	2,492	1,004	0	393	270	70	0	0
70 Tuskegee University	4,137	611	175	0	0	3,308	0	43	0
Total, 1st 70 insts.	4,095,379	662,584	583,297	216,437	289,353	2,201,428	54,801	62,675	24,804
71 Illinois Inst of Tech	4,114	2,700	547	553	189	54	71	0	0
72 U Hlth Sci/Chcgo Med Sch	3,650	0	0	0	0	3,448	202	0	0
73 Hampton University	3,345	259	2,396	200	490	0	0	0	0
74 Stevens Institute of Tech	3,116	2,600	491	0	25	0	0	0	0
75 Worcester Poly Institute	3,050	2,083	386	0	340	215	0	15	11
76 Creighton University	2,580	0	0	0	0	2,580	0	0	0
77 Loma Linda University	2,529	0	0	0	0	2,529	0	0	0
78 Texas Christian Univ	2,430	0	550	4	13	136	1,727	0	0
79 Xavier University of LA	2,424	0	531	0	0	1,893	0	0	0
80 Marquette University	2,068	530	296	0	42	923	161	0	116
Total, 1st 80 insts.	4,124,685	670,756	588,494	217,194	290,452	2,213,206	56,962	62,690	24,931
81 Florida Inst of Tech	1,640	232	37	132	251	720	194	0	74
82 Wentworth Inst of Tech	1,460	0	0	1,460	0	0	0	0	0
83 Wesleyan University	1,458	0i	665i	5i	95i	660i	19i	14i	0i
84 Inst Paper Sci and Tech	1,408	991	398	0	19	0	0	0	0
85 Nova University	1,395	0	78	1,069	0	0	248	0	0
86 Ponce School of Medicine	1,347	0	0	0	0	1,347	0	0	0
87 Fordham University	1,303	0	150	0	52	408	0	693	0
88 University of Tulsa	1,264	395	138	137	45	375	174	0	0
89 Amherst College	1,132	0	534	9	38	548	3	0	0
90 University of the Pacific	1,039	48	170e	0	0	520	301	0	0
Total, 1st 90 insts.	4,138,131	672,422	590,664	220,006	290,952	2,217,784	57,901	63,397	25,005
91 Bryn Mawr College	976	0	349	163	94	171	25	174	0
92 Clark University	936	0	509	288	29	63	47	0	0
93 Morehouse College	917	0	34	0	0	747	110	26	0
94 Villanova University	708	167	93	0	42	301	105	0	0
95 Baylor Col of Dentistry	696	0	0	0	0	696	0	0	0
96 Tougaloo College	684	0	168	0	0	428	0	88	0
97 Selma University	650	0	40	0	190	300	0	120	0
98 U Ctrl Del Caribe Esc Med	617	0	0	0	0	617	0	0	0
99 Fisk University	616	0	528	0	0	88	0	0	0
100 Bethune Cookman College	548	0	152	0	60	318	0	18	0
Total, 1st 100 insts.	4,145,479	672,589	592,537	220,457	291,367	2,221,513	58,188	63,823	25,005
Total, all other sampled insts.	12,284	1,008	2,763	684	840	4,352	2,373	187	77
Estimated total non-sampled insts.	15,761	20	4,653	4,319	1,155	4,114	1,208	87	205

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-46. Total and federally financed R&D expenditures at historically black colleges and universities: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	150,729	139,186	123,591	92,458	122,110	114,663	100,973	75,625
1 Florida A & M University	18,552	15,847	14,171	12,079	15,592	13,110	10,509	8,674
2 Howard University	15,731	17,382	17,125i	16,870i	10,754	13,067	12,146i	11,227i
3 NC Ag & Tech State Univ	10,427	8,657	6,706	6,401	8,205	7,503	5,752	5,717
4 Clark Atlanta University	8,655	4,327i	0e	--	6,538	3,269i	0e	--
5 Meharry Medical College	7,249	6,663	6,564	5,228	7,014	6,391	6,397	5,125
6 Alabama A & M University	6,699	7,010	6,272	6,140	5,481	5,560	4,801	5,121
7 Morehouse School of Med	6,291	5,891	4,320	2,222	5,020i	5,149	4,238	1,815
8 Southern U & A&M College	5,942	4,856	3,967	3,451	4,332	4,094	3,233	3,112
9 Virginia State University	5,795	3,258	2,620	2,476	5,347	2,744	2,056	2,476
10 Tuskegee University	4,426	5,089	5,348	3,752	4,137	4,783	4,967	3,543
Total, 1st 10 insts.	89,767	78,980	67,093	58,619	72,420	65,670	54,099	46,810
11 U of the Virgin Islands	4,329i	4,883e	4,734	4,666	2,262i	2,639e	2,600	2,578
12 Jackson State University	3,912	3,762	3,747	3,403	3,429	3,381	3,624	2,801
13 Tennessee State Univ	3,709	3,300	3,442	3,408	3,701	3,290	3,382	3,382
14 Prairie View A & M Univ	3,623	3,521	3,680	1,741e	3,373	3,406	3,568	1,560e
15 Hampton University	3,345	2,307	2,168	--	3,345	2,307	2,168	--
16 Lincoln University	3,027	2,771	2,901	--	2,763	2,600	2,706	--
17 University of D C	2,865	2,569	2,271i	1,973	1,585	1,455	1,330i	1,205
18 South Carolina St College	2,526	2,593	1,694i	796	1,309	1,308	1,014i	721
19 Xavier University of LA	2,424	1,902	1,294	--	2,424	1,902	1,294	--
20 Univ of Ark Pine Bluff	2,419	1,188	1,148	1,199	2,176	1,188	1,148	1,199
Total, 1st 20 insts.	121,946	107,776	94,172	75,805	98,787	89,146	76,933	60,256
21 Fort Valley State Univ.	2,370	2,313	2,173	--	2,047	1,938	1,741	--
22 Texas Southern Univ	2,101	1,546	1,519	1,703	1,810	1,363	1,293	1,419
23 Alcorn State University	2,041	1,935	1,850	1,692e	1,665	1,487	1,850	1,692i
24 Kentucky State University	2,026	2,856	1,721	1,697	2,026	2,856	1,721	1,697
25 Central State University	1,640	3,976	673	--	680	2,323	449	--
26 U of MD Eastern Shore	1,620	1,850	2,944	1,736	1,371	1,552	2,203	1,736
27 Delaware State College	1,330	1,027	1,027	--	915	920	920	--
28 Langston University	1,310	1,200	2,349	--	1,310	1,200	1,961	--
29 Tougaloo College	1,262	1,028	1,191	--	684	566	787	--
30 Albany State College	1,172	1,173	1,725	366	536	516	653	348
Total, 1st 30 insts.	138,818	126,680	111,344	82,999	111,831	103,867	90,511	67,148
31 Morehouse College	926	868	1,093	--	917	868	997	--
32 Morris Brown College	887	647e	164	--	442	464e	164	--
33 Norfolk State University	752	826	652	425	726	825	648	400
34 Morgan State University	701	657	649	742e	683	655	638	742e
35 Coppin State College	695	1,017	834	--	212	387	388	--
36 Selma University	650	790	816	--	650	790	816	--
37 Fisk University	641	1,156	1,157	1,741	616	1,156	1,131	1,379
38 Winston-Salem State Univ	617	532	650	--	617	532	650	--
39 Bethune Cookman College	599	554	440	--	548	494	420	--
40 Lincoln University (PA)	510	845	768e	867	437	632	692e	789
Total, 1st 40 insts.	145,796	134,572	118,567	86,774	117,679	110,670	97,055	70,458
41 Southern Univ-New Orleans	490i	553i	500	--	393i	459i	420e	--
42 Johnson C. Smith Univ	475	477	480	--	454	467	480	--
43 Grambling State Univ	450i	409	106	64	200i	182	106	64
44 Alabama State University	448	423	456	--	442	403	456	--
45 Spelman College	444	505	399	--	358	348	272	--
46 Claflin College	383	205	0e	--	381	203	0e	--
47 Rust College	289	156	214	--	271	156	214	--
48 Fayetteville State Univ	275	154	360	--	275	154	258	--
49 Bowie State University	234	35	0	--	234	35	0	--
50 North Carolina Cntrl Univ	219i	199	555e	571	219i	199	422e	350
Total, 1st 50 insts.	149,503	137,688	121,637	87,409	120,906	113,276	99,683	70,872

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-46. Total and federally financed R&D expenditures at historically black colleges and universities: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 West Virginia State Col	218	146	81	--	210	138	75	--
52 Savannah State College	212	221	179	--	212	221	179	--
53 Oakwood College	179	226	0	--	179	226	0	--
54 Philander Smith College	154	120	165	--	154	120	154	--
55 Southern Univ-Shreveport	116i	131	148	--	116i	131	148	--
56 Trenholm State Tech Col	100	30	22	--	100	5	5	--
57 Bennett College	64	425	364	--	62	358	229	--
58 Miss Valley State Univ	64	43	14	31	64	43	14	31
59 Jarvis Christian College	60	75	60	--	60	75	60	--
60 Knoxville College	59i	66i	60	--	47i	55i	50	--
Total, 1st 60 insts.	150,729	139,171	122,730	87,440	122,110	114,648	100,597	70,903
61 Benedict College	0	0	0	--	0	0	0	--
62 Cheyney University of PA	0	0	0e	--	0	0	0e	--
63 Dillard University	0	0	469	0	0	0	0	0
64 Elizabeth City State Univ	0	15	26	--	0	15	26	--
65 Paul Quinn College	0	0	0	--	0	0	0	--
66 Shaw University	0	0	0	--	0	0	0	--
67 Stillman College	0	0	0	--	0	0	0	--
68 Talladega College	0	0	366	--	0	0	350	--
69 Voorhees College	0	0	0	--	0	0	0	--
70 Wiley College	0	0	0	--	0	0	0	--
Total, 1st 70 insts.	150,729	139,186	123,591	87,440	122,110	114,663	100,973	70,903
Total, all other sampled insts.	0	0	0	5,018	0	0	0	4,722

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-47. Total and federally financed R&D expenditures in engineering at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	2,892,749	2,662,615	2,398,739	2,097,242	1,630,944	1,524,286	1,383,163	1,229,753
1 Johns Hopkins Univ	216,567	204,793	209,748	162,390	211,994	200,964	206,629	159,976
2 Mass Inst of Technology	132,421	127,004	116,367	107,281	87,421	85,559	80,356	77,811
3 Georgia Institute of Tech	124,708	116,867	116,109	95,484	71,606	65,901	65,178	52,700
4 Pennsylvania State Univ	120,336	118,070	97,276	82,807	78,021	74,737	59,260	54,583
5 Stanford University	92,089	87,187	78,311	75,828	73,304	75,484	65,502	63,486
6 Univ of Texas at Austin	86,521	58,968	50,944	46,086	43,157	26,031	22,894	21,150
7 Texas A & M University	65,627	62,791	52,541	37,517	12,826	13,388	14,743	11,441
8 University of Michigan	63,841	53,905	46,866	42,808	36,653	31,447	27,507	24,633
9 Univ of Cal Berkeley	57,481	52,124	47,393	42,432	29,047	29,399	28,936	25,371
10 University of Ill Urbana	54,694	49,299	58,003	58,693	29,347	28,734	37,780	39,175
Total, 1st 10 insts.	1,014,285	931,008	873,558	751,326	673,376	631,644	608,785	530,326
11 VA Polytech Inst & St U	48,407	44,473	36,123	30,282	24,273	22,304	17,234	14,436
12 N C State Univ at Raleigh	46,343	40,181	34,421	31,219	17,192	15,077	11,209	9,823
13 Utah State University	44,842	40,694	23,852	18,763	40,709	38,495	21,007	15,352
14 New Mexico State Univ	44,091	35,725i	30,060	27,195	37,980	32,984i	27,538	25,023
15 Cornell University	43,632	39,663	38,648	39,822	24,456	22,780	22,630	24,232
16 Univ of Wis-Madison	43,341	39,781	34,697	32,287	25,715	24,474	21,745	21,125
17 Ohio State University	42,950	43,810	40,616	28,723	15,849	13,781	12,567	12,180
18 Rensselaer Polytech Inst	37,927	33,843	26,877	25,095	17,692	16,466	13,259	12,592
19 Univ of MD College Park	36,868	43,964	41,624	37,807	16,331	16,336	15,655	15,397
20 Iowa St U of Sci & Tech	36,768	26,974	25,225	20,292	12,747	11,496	8,821	7,734
Total, 1st 20 insts.	1,439,454	1,320,116	1,205,701	1,042,811	906,320	845,837	780,450	688,220
21 Purdue University	35,130	32,466	32,873	32,206	19,814	18,301	18,733	19,612
22 University of Dayton	33,660	30,722	24,511	24,776	27,703	24,163	20,423	20,541
23 Louisiana State Univ Sys	31,768	20,890	13,216	11,911	18,351	8,345	2,979	2,144
24 Univ. Of Tennessee System	30,817	27,124	24,895	24,002	15,411	15,280	15,126	14,616
25 University of Florida	29,445	30,585	27,162	21,526	13,936	14,766	13,379	9,325
26 University of Minnesota	27,460	27,943	27,709	24,184	10,524	10,781	10,421	8,890
27 Univ of Cal Los Angeles	25,715	24,213	22,975	21,497	19,259	16,873	16,679	15,733
28 Carnegie-Mellon Univ	24,615	24,000	25,982	25,548	14,021	13,040	14,934	14,005
29 Rutgers the St Univ of NJ	24,591	21,694	19,463	15,296	6,863	4,262	3,680	2,423
30 Univ of Southern Cal	24,010	27,713	24,525	23,480	19,446	18,427	16,495	17,280
Total, 1st 30 insts.	1,726,665	1,587,466	1,449,012	1,267,237	1,071,648	990,075	913,299	812,789
31 Case Western Reserve Univ	23,770	19,049e	18,089	16,062	15,564	12,638	13,173	10,911
32 SUNY at Buffalo	22,881	23,166	19,630	17,874	7,579	7,900	6,486	8,321
33 University of Rochester	22,304	22,858	23,768	18,897	19,284	19,203	19,943	15,714
34 Auburn University	22,182	18,819	16,996	15,775	6,646	5,017	7,664	9,124
35 University of New Mexico	22,083	20,402	14,763	14,220	11,226	10,689	7,444	8,333
36 University of Connecticut	21,575	20,655	20,039	11,549	2,649	3,450	3,498	2,337
37 Univ. of Colorado	21,550	20,660	15,625	12,523	13,920	13,704	10,816	8,248
38 Univ of Cal Santa Barbara	20,648	22,214	15,237	13,461	16,677	18,807	12,352	11,178
39 University of Washington	20,497	16,985	16,738	16,374	12,912	11,359	10,581	11,296
40 Lehigh University	20,185	19,596	18,214	18,949	7,703	7,353	6,186	6,449
Total, 1st 40 insts.	1,944,340	1,791,870	1,628,111	1,422,921	1,185,808	1,100,195	1,011,442	904,700
41 Princeton University	20,134	23,048	20,957	17,964	10,283	11,931	10,508	10,521
42 Arizona State University	20,129	18,618	14,642	14,991	5,400	4,933	5,742	5,745
43 Northwestern University	19,603	17,407	14,728	13,422	10,294	10,195	8,200	7,512
44 Clemson University	18,715	16,414	14,179	13,212	5,134	4,703	3,239	3,114
45 University of Arizona	18,080	13,844	12,583	10,473	7,394	6,666	6,114	4,398
46 California Inst of Tech	17,931	17,363	16,670	17,124	15,677	15,186	13,641	14,516
47 University of Virginia	17,748	18,116	14,382	12,301	10,565	9,776	7,621	6,184
48 Univ of South Florida	16,945	24,961	21,257	2,846	10,343	18,910	15,248	544
49 Columbia Univ Main Div	16,785	17,647	15,429	15,677	10,828	11,777	9,386	12,747
50 Colorado State University	16,406	16,026	13,853	13,151	11,117	11,768	10,472	10,328
Total, 1st 50 insts.	2,126,816	1,975,314	1,786,791	1,554,082	1,282,843	1,206,040	1,101,613	980,309

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-47. Total and federally financed R&D expenditures in engineering at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 University of Cincinnati	15,961	14,150	12,911	11,037	7,903	6,903	5,956	5,429
52 Mississippi State Univ	15,360	12,433	10,145	6,774	10,243	8,199	6,791	3,953
53 Michigan State University	15,340 i	14,650	11,494	10,139	5,211 i	4,922	3,604	3,250
54 University of Utah	15,116	16,502	15,959	13,106	9,070	7,872	9,365	7,795
55 University of Kentucky	14,610	12,172	11,336	6,661	3,858	2,821	3,032	1,749
56 U of Houston	14,396	8,027	8,020	6,725	3,694	2,754	3,137	2,999
57 Univ of South Carolina	14,260	6,974	3,088	2,400	4,297	2,308	1,298	926
58 University of Oklahoma	13,724	8,735	8,529	6,783	5,088	2,009	2,247	2,152
59 Oklahoma State University	13,203	15,639	9,812	7,715	6,027	6,931	3,577	1,691
60 Univ Alabama Huntsville	12,781	11,918	10,156	6,298	9,175	8,108	6,519	4,272
Total, 1st 60 insts.	2,271,567	2,096,514	1,888,241	1,631,720	1,347,409	1,258,867	1,147,139	1,014,525
61 University of Delaware	12,528	12,251	10,874	9,596	4,561	4,305	4,461	4,025
62 Drexel University	12,506	12,835	11,101	10,390	4,957	4,005	3,336	4,007
63 Univ of Nebraska-Lincoln	12,377	9,709	7,253	4,649	1,450	1,337	991	1,000
64 Michigan Tech University	12,326	10,366	8,861	8,642	3,855	3,490	2,483	3,349
65 Woods Hole Ocngrphic Inst	12,165 i	11,343	9,445	11,600	10,461 i	9,714	7,290	8,600
66 N Mex Inst Mining & Tech	11,239 i	16,090	16,325	15,114	2,567 i	2,519	4,378	3,874
67 University of Iowa	10,805	9,707	8,710	8,845	4,102	4,412	3,833	3,678
68 Univ of Pennsylvania	10,620	10,832	9,981	8,878	6,960	6,685	6,439	5,743
69 Univ of Missouri Rolla	10,286	9,207	11,435	12,812	3,197	2,774	2,315	2,697
70 Univ of Missouri Columbia	9,937	10,125	5,653	4,682	2,167	1,624	1,034	805
Total, 1st 70 insts.	2,386,356	2,208,979	1,987,879	1,726,928	1,391,686	1,299,732	1,183,699	1,052,303
71 Brown University	9,936	7,156	6,382	6,205	7,144	5,704	5,357	5,525
72 Univ of Massachusetts	9,717	9,239	8,814	7,428	4,895	4,752	4,142	3,777
73 Univ of Cal Davis	9,634	7,794	7,124	6,402	5,293	4,149	4,015	4,224
74 Texas Tech University	8,902	8,801	8,839	7,485	2,419	2,668	3,432	2,840
75 Colorado School of Mines	8,648	6,097	3,069	3,726	4,227	2,576	1,622	2,375
76 Vanderbilt University	8,554	7,287	5,798	5,219	5,908	5,018	3,793	2,555
77 University of N Dakota	8,361	8,271	8,210	7,583	7,740	6,793	6,056	5,702
78 Tenn Technological Univ	8,242	7,832	6,359	6,336e	324	644	267	235
79 Univ of Tex at Arlington	8,240	2,849	4,517	4,351	1,355	563	270	631
80 Oregon State University	8,226	8,459	5,130	6,302	4,263	5,445	2,902	3,714
Total, 1st 80 insts.	2,474,816	2,282,764	2,052.121	1,787,965	1,435,254	1,338,044	1,215,555	1,083,881
81 University of Idaho	8,031	6,719	6,477	6,032	4,597	4,101	3,755	3,113
82 Univ of Ill Chicago	7,940	5,486	5,939	4,940	2,566	2,335	2,247	1,588
83 Stevens Institute of Tech	7,469	5,226	4,177	5,605	2,600	2,217	2,006	2,240
84 Yale University	7,329	6,732	6,052	5,794	4,603	4,652	4,228	4,079
85 Mercer University	7,184	4,154	2,387	517	6,261	3,259	1,542	206
86 SUNY Col of Env Sci & For	7,139	6,240	5,465	3,843	169	226	194	140
87 West Virginia University	7,005	5,381	6,894	6,153	3,492	3,264	3,211	2,755
88 Washington State Univ	6,792	6,025	4,305	3,703	2,774	2,037	1,672	1,772
89 Polytechnic University	6,683	7,864	8,013	6,071	4,140	5,218	5,661	4,305
90 Ohio University	6,678	5,766	4,611	4,302	2,519	2,332	1,794	2,043
Total, 1st 90 insts.	2,547,066	2,342,357	2,106,441	1,834,925	1,468,975	1,367,685	1,241,865	1,106,122
91 Kans St U - Ag & App Sci	6,635	6,186	4,651	3,914	1,615	1,921	1,429	872
92 N J Inst of Technology	6,614	4,510	3,771	3,930	1,624	928	596	722
93 US Naval Postgrad School	6,599	5,575	4,419	3,931	6,504	5,575	4,407	3,906
94 University of Notre Dame	6,583	4,630	4,035	2,749	2,764	1,928	1,662	1,267
95 University of Pittsburgh	6,514	5,944	6,201	5,498	3,179	2,967	2,910	2,590
96 Duke University	6,512	6,492	5,407	3,233	4,948	4,899	3,744	2,103
97 Clarkson University	6,370	5,381	4,415	3,728	2,492	2,147	2,041	1,746
98 The University of Alabama	5,996	6,709	5,555	5,884	1,970	2,871	2,514	3,064
99 Northeastern University	5,925	5,227	4,555	4,437	3,531 i	3,469	3,127	3,139
100 NC Ag & Tech State Univ	5,753	4,355	3,097	2,407	4,049	3,644	2,470	1,827
Total, 1st 100 insts.	2,610,567	2,397,366	2,152,547	1,874,636	1,501,651	1,398,034	1,266,765	1,127,358
Total, all other sampled insts.	258,207	241,086	225,123	222,606	119,559	117,316	107,701	102,395
Estimated total non-sampled insts.	23,975	24,163	21,069	0	9,734	8,936	8,697	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-48. R&D expenditures in engineering subfields at universities and colleges: fiscal year 1991

[Dollars in thousands]

Institution ranking	Engineering subfields							
	Total	Aero/ astro-nautical	Chemical	Civil	Elec-trical	Mechan-ical	Metal-lurgical and materials	Other
Total, all institutions	2,892,749	174,321	238,553	315,134	682,213	415,071	301,992	765,466
1 Johns Hopkins Univ	216,567	21,836	5,103	2,708	66,666	43,922	640	75,692
2 Mass Inst of Technology	132,421	14,512	16,972	9,623	38,906	17,130	13,423	21,855
3 Georgia Institute of Tech	124,708	11,192	2,710	4,565	67,092	18,333	7,097	13,719
4 Pennsylvania State Univ	120,336	1,541	2,038	3,974	2,664	13,360	19,456	77,303
5 Stanford University	92,089	5,083	3,151	5,879	32,774	9,278	3,013	32,911
6 Univ of Texas at Austin	86,521	5,073	9,387	14,602	7,088	17,067	2,584	30,720
7 Texas A & M University	65,627	3,576	9,974	22,398	6,047	9,607	2,498	11,527
8 University of Michigan	63,841	2,328	2,491	7,900	25,038	8,216	4,940	12,928
9 Univ of Cal Berkeley	57,481	76	3,095	13,297	27,321	3,367	3,739	6,586
10 University of Ill Urbana	54,694	1,989	1,757	8,120	11,162	8,138	19,688	3,840
Total, 1st 10 insts.	1,014,285	67,206	56,678	93,066	284,758	148,418	77,078	287,081
11 VA Polytech Inst & St U	48,407	2,156	2,583	4,372	7,692	11,860	4,846	14,898
12 N C State Univ at Raleigh	46,343	0	6,081	2,309	12,559	6,085	11,525	7,784
13 Utah State University	44,842	0	0	2,704	40,233	878	0	1,027
14 New Mexico State Univ	44,091	27,864	2,630	1,719	8,427	2,544	0	907
15 Cornell University	43,632	4,536	3,382	3,974	10,203	1,108	6,055	14,374
16 Univ of Wis-Madison	43,341	0	4,903	1,704	7,551	1,985	3,816	23,382
17 Ohio State University	42,950	1,205	1,236	1,337	5,834	3,401	2,411	27,526
18 Rensselaer Polytech Inst	37,927	0	3,297	3,622	9,940	9,682	6,569	4,817
19 Univ of MD College Park	36,868	2,196	761	1,536	10,137	4,375	1,607	16,256
20 Iowa St U of Sci & Tech	36,768	595	1,306	5,363	3,876	3,328	1,575	20,725
Total, 1st 20 insts.	1,439,454	105,758	82,857	121,706	401,210	193,664	115,482	418,777
21 Purdue University	35,130	1,694	2,314	4,135	5,637	6,738	2,749	11,863
22 University of Dayton	33,660	5,229	0	499	2,689	11,520	11,784	1,939
23 Louisiana State Univ Sys	31,768	0	3,006	2,733	921	1,358	17,611	6,139
24 Univ. Of Tennessee System	30,817	3,863	10,010	6,013	1,905	1,051	1,819	6,156
25 University of Florida	29,445	1,689	1,443	4,519	4,372	1,508	7,217	8,697
26 University of Minnesota	27,460	861	8,540	6,377	2,802	3,780	1,865	3,235
27 Univ of Cal Los Angeles	25,715	0	1,311	1,885	9,159	8,719	2,575	2,066
28 Carnegie-Mellon Univ	24,615	0	1,477	1,709	10,774	1,718	3,033	5,904
29 Rutgers the St Univ of NJ	24,591	0	2,167	168	3,192	1,332	14,402	3,330
30 Univ of Southern Cal	24,010	3,018	754	1,555	12,278	396	1,009	5,000
Total, 1st 30 insts.	1,726,665	122,112	113,879	151,299	454,939	231,784	179,546	473,106
31 Case Western Reserve Univ	23,770	0	8,145	715	3,200	4,139	3,923	3,648
32 SUNY at Buffalo	22,881	0	1,898	10,770	3,574	3,247	0	3,392
33 University of Rochester	22,304	0	532	0	1,725	6,427	0	13,620
34 Auburn University	22,182	6,325	3,619	4,768	1,718	2,728	537	2,487
35 University of New Mexico	22,083	0	2,005	10,566	1,678	687	7,027	120
36 University of Connecticut	21,575	0	690	3,425	1,842	849	14,764	5
37 Univ. of Colorado	21,550	5,586	1,867	4,413	8,148	1,313	0	223
38 Univ of Cal Santa Barbara	20,648	0	3,025	0	7,838	1,268	6,251	2,266
39 University of Washington	20,497	2,029	1,963	4,644	3,636	1,305	1,279	5,641
40 Lehigh University	20,185	0	2,883	5,084	2,345	3,658	4,866	1,349
Total, 1st 40 insts.	1,944,340	136,052	140,506	195,684	490,643	257,405	218,193	505,857
41 Princeton University	20,134	7,901	3,207	3,364	5,355	0	65	242
42 Arizona State University	20,129	37	2,024	2,517	7,485	4,069	0	3,997
43 Northwestern University	19,603	0	1,651	2,127	940	1,247	4,034	9,604
44 Clemson University	18,715	0	1,184	2,475	2,743	3,038	0	9,275
45 University of Arizona	18,080	1,940	370	3,927	3,990	0	4,052	3,801
46 California Inst of Tech	17,931	3,404	2,358	625	2,328	1,061	796	7,359
47 University of Virginia	17,748	1,221	812	895	2,448	2,326	4,655	5,391
48 Univ of South Florida	16,945	0	276	3,033	13,236	141	0	259
49 Columbia Univ Main Div	16,785	0	3,230	486	8,819	464	0	3,786
50 Colorado State University	16,406	0	1,421	9,325	2,373	1,669	0	1,618
Total, 1st 50 insts.	2,126,816	150,555	157,039	224,458	540,360	271,420	231,795	551,189

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-48. R&D expenditures in engineering subfields at universities and colleges: fiscal year 1991

[Dollars in thousands]

Institution ranking	Engineering subfields							
	Total	Aero/ astro-nautical	Chemical	Civil	Elec-trical	Mechan-ical	Metal-lurgical and materials	Other
51 University of Cincinnati	15,961	1,827	1,195	5,775	3,557	2,184	1,278	145
52 Mississippi State Univ	15,360	2,701	1,595	179	928	449	0	9,508
53 Michigan State University	15,340i	0i	3i	0i	6i	1,296i	0i	14,035i
54 University of Utah	15,116	0	1,366	229	747	5,119	3,300	4,355
55 University of Kentucky	14,610	0	278	193	164	1,086	0	12,889
56 U of Houston	14,396	37	2,496	1,338	1,829	2,281	0	6,415
57 Univ of South Carolina	14,260	0	474	422	1,125	12,050	0	189
58 University of Oklahoma	13,724	2,081	2,160	2,584	1,781	1,526	0	3,592
59 Oklahoma State University	13,203	192	2,261	2,940	567	2,401	0	4,842
60 Univ Alabama Huntsville	12,781	0	1,630	15	2,414	4,819	248	3,655
Total, 1st 60 insts.	2,271,567	157,393	170,497	238,133	553,478	304,631	236,621	610,814
61 University of Delaware	12,528	0	4,899	1,002	2,827	94	3,687	19
62 Drexel University	12,506	0	698	1,443	5,394	2,894	2,027	50
63 Univ of Nebraska-Lincoln	12,377	0	351	1,361	1,647	2,076	0	6,942
64 Michigan Tech University	12,326	0	1,100	2,082	592	3,320	4,270	962
65 Woods Hole Ocngrphic Inst	12,165i	869i	917i	955i	3,064i	2,533i	0i	3,827i
66 N Mex Inst Mining & Tech	11,239i	0i	1,598i	0i	0i	0i	2,244i	7,397i
67 University of Iowa	10,805	0	1,164	3,202	655	5,023	0	761
68 Univ of Pennsylvania	10,620	0	1,391	573	2,069	1,205	3,771	1,611
69 Univ of Missouri Rolla	10,286	81	161	956	773	1,570	5,980	765
70 Univ of Missouri Columbia	9,937	0	910	714	745	845	0	6,723
Total, 1st 70 insts.	2,386,356	158,343	183,686	250,421	571,244	324,191	258,600	639,871
71 Brown University	9,936	710i	731i	770i	2,426i	2,194i	0i	3,105i
72 Univ of Massachusetts	9,717	0	1,868	1,323	3,624	1,863	0	1,039
73 Univ of Cal Davis	9,634	0	838	2,003	2,423	3,162	0	1,208
74 Texas Tech University	8,902	0	292	1,572	2,217	1,460	2,222	1,139
75 Colorado School of Mines	8,648	0	1,399	0	0	0	5,410	1,839
76 Vanderbilt University	8,554	0	345	1,222	1,993	1,233	3,353	408
77 University of N Dakota	8,361	0	17	1	9	28	0	8,306
78 Tenn Technological Univ	8,242	0	21	2,663	2,301	3,060	0	197
79 Univ of Tex at Arlington	8,240	477	0	556	2,959	537	0	3,711
80 Oregon State University	8,226	0	155	3,376	1,226	1,616	0	1,853
Total, 1st 80 insts.	2,474,816	159,530	189,352	263,907	590,422	339,344	269,585	662,676
81 University of Idaho	8,031	0	751	267	1,917	164	1,414	3,518
82 Univ of Ill Chicago	7,940	0	698	1,519	3,449	1,700	0	574
83 Stevens Institute of Tech	7,469	0	1,466	497	790	1,113	1,922	1,681
84 Yale University	7,329	0	1,404	0	2,228	2,150	0	1,547
85 Mercer University	7,184	711	0	0	330	4,122	82	1,939
86 SUNY Col of Env Sci & For	7,139	0	1,438	57	0	0	0	5,644
87 West Virginia University	7,005	0	673	1,305	490	2,946	750	841
88 Washington State Univ	6,792	0	512	1,074	1,912	1,560	64	1,670
89 Polytechnic University	6,683	62	562	134	5,061	111	529	224
90 Ohio University	6,678	0	1,635	641	3,526	465	0	411
Total, 1st 90 insts.	2,547,066	160,303	198,491	269,401	610,125	353,675	274,346	680,725
91 Kans St U - Ag & App Sci	6,635	0	469	544	471	583	0	4,568
92 N J Inst of Technology	6,614	0	1,983	1,525	1,359	1,575	172	0
93 US Naval Postgrad School	6,599	2,045	0	0	2,549	1,828	177	0
94 University of Notre Dame	6,583	939i	2,843i	1,118i	841i	0i	311i	531i
95 University of Pittsburgh	6,514	0	1,944	894	1,005	470	1,917	284
96 Duke University	6,512	0	0	594	719	1,621	0	3,578
97 Clarkson University	6,370	0	2,127	1,411	1,316	1,516	0	0
98 The University of Alabama	5,996	621	645	374	780	1,115	2,428	33
99 Northeastern University	5,925	0	509	134	4,366	375	0	541
100 NC Ag & Tech State Univ	5,753	0	273	91	1,167	2,071	0	2,151
Total, 1st 100 insts.	2,610,567	163,908	209,284	276,086	624,698	364,829	279,351	692,411
Total, all other sampled insts.	258,207	8,497	28,898	34,310	50,720	45,684	21,941	68,157
Estimated total non-sampled insts.	23,975	1,916	371	4,738	6,795	4,558	700	4,898

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-49. Federally financed R&D expenditures in engineering subfields at universities and colleges: fiscal year 1991

[Dollars in thousands]

Institution ranking	Engineering subfields							
	Total	Aero/ astro-nautical	Chemical	Civil	Elec-trical	Mechan-ical	Metal-lurgical and materials	Other
Total, all institutions	1,630,944	131,708	114,310	122,873	437,494	243,182	155,051	426,326
1 Johns Hopkins Univ	211,994	21,352	4,501	1,472	66,165	43,574	427	74,503
2 Mass Inst of Technology	87,421	10,859	9,605	6,680	28,470	9,051	9,488	13,268
3 Pennsylvania State Univ	78,021	1,064	695	1,132	1,512	7,017	6,576	60,025
4 Stanford University	73,304	4,233	2,484	4,393	24,837	7,217	2,013	28,127
5 Georgia Institute of Tech	71,606	6,426	1,556	2,621	38,524	10,526	4,075	7,878
6 Univ of Texas at Austin	43,157	3,297	3,406	2,875	2,509	11,725	1,378	17,967
7 Utah State University	40,709	0	0	1,570	38,564	27	0	548
8 New Mexico State Univ	37,980	25,545	2,322	450	6,911	2,329	0	423
9 University of Michigan	36,653	1,216	1,447	4,030	16,954	3,941	3,277	5,788
10 University of Ill Urbana	29,347	1,069	857	4,496	7,407	3,421	10,191	1,906
Total, 1st 10 insts.	710,192	75,061	26,873	29,719	231,853	98,828	37,425	210,433
11 Univ of Cal Berkeley	29,047	76	1,024	2,678	16,909	2,513	2,835	3,012
12 University of Dayton	27,703	4,766	0	384	2,134	8,186	10,477	1,756
13 Univ of Wis-Madison	25,715	0	2,463	479	4,229	921	2,569	15,054
14 Cornell University	24,456	3,216	2,084	1,440	5,299	891	3,664	7,862
15 VA Polytech Inst & St U	24,273	1,541	993	1,381	2,964	5,495	2,625	9,274
16 Purdue University	19,814	1,233	1,096	1,835	3,895	3,356	2,269	6,130
17 Univ of Southern Cal	19,446	2,823	583	848	10,530	304	803	3,555
18 University of Rochester	19,284	0	272	0	1,472	4,510	0	13,030
19 Univ of Cal Los Angeles	19,259	0	842	1,134	6,614	7,848	1,643	1,178
20 Louisiana State Univ Sys	18,351	0	773	1,129	109	466	14,950	924
Total, 1st 20 insts.	937,540	88,716	37,003	41,027	286,008	133,318	79,260	272,208
21 Rensselaer Polytech Inst	17,692	0	1,538	1,690	4,637	4,516	3,064	2,247
22 N C State Univ at Raleigh	17,192	0	2,422	502	4,872	3,638	4,740	1,018
23 Univ of Cal Santa Barbara	16,677	0	2,315	0	5,510	1,075	5,643	2,134
24 Univ of MD College Park	16,331	1,377	109	35	6,355	1,923	933	5,599
25 Ohio State University	15,849	730	778	587	3,582	2,510	1,372	6,290
26 California Inst of Tech	15,677	3,166	1,911	538	1,752	899	701	6,710
27 Case Western Reserve Univ	15,564	0	4,295	650	1,889	3,484	2,903	2,343
28 Univ. Of Tennessee System	15,411	592	8,522	1,791	1,106	552	431	2,417
29 Carnegie-Mellon Univ	14,021	0	1,117	1,050	5,745	1,377	1,728	3,004
30 University of Florida	13,936	856	1,085	503	2,251	994	4,584	3,663
Total, 1st 30 insts.	1,095,890	95,437	61,095	48,373	323,707	154,286	105,359	307,633
31 Univ. of Colorado	13,920	4,449	1,187	2,336	4,881	1,067	0	0
32 University of Washington	12,912	1,757	950	2,081	1,961	939	1,019	4,205
33 Texas A & M University	12,826	1,517	1,703	1,671	1,866	1,954	71	4,044
34 Iowa St U of Sci & Tech	12,747	308	275	2,044	687	601	583	8,249
35 University of New Mexico	11,226	0	1,213	6,913	175	208	2,717	0
36 Colorado State University	11,117	0	667	7,932	945	760	0	813
37 Columbia Univ Main Div	10,828	0	424	409	6,165	430	0	3,400
38 University of Virginia	10,565	1,105	516	562	1,466	1,480	3,266	2,170
39 University of Minnesota	10,524	597	5,562	1,245	1,502	1,065	219	334
40 Woods Hole Ocngrphic Inst	10,461 i	749 i	815 i	825 i	2,729 i	2,027 i	0 i	3,316 i
Total, 1st 40 insts.	1,213,016	105,919	74,407	74,391	346,084	164,817	113,234	334,164
41 Univ of South Florida	10,343	0	48	361	9,827	96	0	11
42 Northwestern University	10,294	0	1,001	1,315	388	439	2,733	4,418
43 Princeton University	10,283	5,021	1,376	1,821	2,065	0	0	0
44 Mississippi State Univ	10,243	677	530	123	691	390	0	7,832
45 Univ Alabama Huntsville	9,175	0	1,461	9	1,485	3,179	169	2,872
46 University of Utah	9,070	0	241	7	369	3,989	2,381	2,083
47 University of Cincinnati	7,903	1,318	302	3,395	1,817	500	448	123
48 University of N Dakota	7,740	0	6	0	0	2	0	7,732
49 Lehigh University	7,703	0	702	3,080	975	1,093	1,786	67
50 SUNY at Buffalo	7,579	0	1,017	4,795	758	973	0	36
Total, 1st 50 insts.	1,303,349	112,935	81,091	89,297	364,459	175,478	120,751	359,338

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-49. Federally financed R&D expenditures in engineering subfields at universities and colleges: fiscal year 1991

[Dollars in thousands]

Institution ranking	Engineering subfields							
	Total	Aero/ astro-nautical	Chemical	Civil	Elec-trical	Mechan-ical	Metal-lurgical and materials	Other
51 University of Arizona	7,394	1,466	177	2,063	563	0	1,912	1,213
52 Brown University	7,144	512i	551i	565i	1,871i	1,385i	0i	2,260i
53 Univ of Pennsylvania	6,960	0	953	291	1,040	916	2,735	1,025
54 Rutgers the St Univ of NJ	6,863	0	827	93	534	700	3,882	827
55 Auburn University	6,646	3,630	894	333	507	1,112	159	11
56 US Naval Postgrad School	6,504	2,045	0	0	2,454	1,828	177	0
57 Mercer University	6,261	711	0	0	330	4,117	82	1,021
58 Oklahoma State University	6,027	0	1,645	1,003	212	320	0	2,847
59 Vanderbilt University	5,908	0	68	599	701	960	3,305	275
60 Arizona State University	5,400	0	1,042	342	1,849	2,053	0	114
Total, 1st 60 insts.	1,368,456	121,299	87,248	94,586	374,520	188,869	133,003	368,931
61 Univ of Cal Davis	5,293	0	520	882	1,270	1,906	0	715
62 Michigan State University	5,211i	0i	0i	0i	0i	0i	0i	5,211i
63 Clemson University	5,134	0	317	469	595	1,322	0	2,431
64 University of Oklahoma	5,088	2,035	633	396	565	254	0	1,205
65 Drexel University	4,957	0	107	635	2,397	1,178	640	0
66 Duke University	4,948	0	0	359	195	1,298	0	3,096
67 Univ of Massachusetts	4,895	0	1,133	497	2,614	596	0	55
68 Yale University	4,603	0	1,022	0	811	1,661	0	1,109
69 University of Idaho	4,597	0	334	30	1,613	26	600	1,994
70 University of Delaware	4,561	0	1,371	374	1,499	15	1,302	0
Total, 1st 70 insts.	1,417,743	123,334	92,685	98,228	386,079	197,125	135,545	384,747
71 Univ of South Carolina	4,297	0	224	266	543	3,264	0	0
72 Oregon State University	4,263	0	113	1,953	593	801	0	803
73 Colorado School of Mines	4,227	0	547	0	0	0	2,274	1,406
74 Polytechnic University	4,140	50	180	60	3,200	100	450	100
75 University of Iowa	4,102	0	157	1,422	354	1,925	0	244
76 NC Ag & Tech State Univ	4,049	0	109	7	780	1,700	0	1,453
77 Dartmouth College	3,920	282i	302i	310i	1,023i	760i	0i	1,243i
78 University of Kentucky	3,858	0	264	103	32	672	0	2,787
79 Michigan Tech University	3,855	0	214	150	270	1,675	1,177	369
80 George Washington Univ	3,735	1,740	0	23	470	45	59	1,398
Total, 1st 80 insts.	1,458,189	125,406	94,795	102,522	393,344	208,067	139,505	394,550
81 U of Houston	3,694	32	1,143	609	560	780	0	570
82 Brigham Young University	3,623	0	2,336	441	344	122	0	380
83 Northeastern University	3,531i	0i	121i	78i	2,907i	82i	0i	343i
84 West Virginia University	3,492	0	257	542	380	1,835	223	255
85 San Diego State Univ	3,385	84	0	63	3,044	194	0	0
86 Old Dominion U Res Fdn	3,208	0	0	275	1,013	1,910	0	10
87 Univ of Missouri Rolla	3,197	52	29	195	347	497	1,956	121
88 University of Pittsburgh	3,179	0	937	395	707	350	790	0
89 Univ of Cal San Diego	3,140	0	0	0	0	2,850	0	290
90 Boston University	3,124	71	0	0	1,229	196	0	1,628
Total, 1st 90 insts.	1,491,762	125,645	99,618	105,120	403,875	216,883	142,474	398,147
91 Univ of Texas at El Paso	2,834	0	0	505	556	1,243	530	0
92 Washington State Univ	2,774	0	240	292	818	1,210	0	214
93 University of Notre Dame	2,764	393i	1,331i	471i	350i	0i	0i	219i
94 Univ of Cal Irvine	2,752	0	0	684	571	1,431	0	66
95 Illinois Inst of Tech	2,700	0	466	312	162	980	261	519
96 Howard University	2,685	0	83	47	1,750	369	0	436
97 University of Connecticut	2,649	0	24	58	790	248	1,529	0
98 Stevens Institute of Tech	2,600	0	615	7	370	821	197	590
99 N Mex Inst Mining & Tech	2,567i	[illegible]	415i	0i	0i	0i	901i	1,251i
100 Univ of Ill Chicago	2,566	[illegible]	432	759	766	609	0	0
Total, 1st 100 insts.	1,518,653	126,038	103,224	108,255	410,008	223,794	145,892	401,442
Total, all other sampled insts.	102,557	4,200	11,027	13,722	23,338	17,089	8,797	24,384
Estimated total non-sampled insts.	9,734	1,470	59	896	4,148	2,299	362	500

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-50. R&D expenditures in the physical sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Physical sciences total				1991 subfields			
	1991	1990	1989	1988	Astronomy	Chemistry	Physics	Other
Total, all institutions	1,936,858	1,796,464	1,637,955	1,546,207	210,149	669,999	883,038	173,672
1 Johns Hopkins Univ	118,842	93,344	85,843	96,702	24,277	6,564	78,983	9,018
2 Mass Inst of Technology	101,286	98,119	89,915	84,630	9,968	16,426	74,892	0
3 Univ of MD College Park	69,447	56,256	46,904	42,756	0	8,415	33,084	27,948
4 University of Arizona	64,837	61,723	49,968	46,661	40,403	5,531	16,123	2,780
5 Univ of Texas at Austin	59,024	40,985	35,845	33,590	9,589	16,513	18,033	14,889
6 Stanford University	58,283	54,078	50,733	56,626	0	8,841	4,354	45,088
7 Univ of Cal Berkeley	55,736	50,711	44,998	42,434	7,123	13,906	34,707	0
8 California Inst of Tech	47,728	42,034	39,377	37,495	9,769	13,931	24,028	0
9 Cornell University	45,572	44,887	43,228	42,461	5,531	10,825	26,195	3,021
10 Univ of Cal San Diego	41,115	30,989	24,540	25,144	17,169	8,811	12,419	2,716
Total, 1st 10 insts.	661,870	573,126	511,351	508,499	123,829	109,763	322,818	105,460
11 University of Ill Urbana	39,511	37,646	23,307	22,034	1,371	9,457	11,511	17,172
12 Univ of Wis-Madison	32,841	29,538	27,197	25,587	4,332	8,878	14,150	5,481
13 Harvard University	25,868	28,340	25,713	20,204	3,001	12,384	10,270	213
14 University of Chicago	24,551	26,088	24,329	22,059	3,508	8,967	11,711	365
15 Indiana University	24,147	22,532	22,059	21,388	1,000	7,324	15,823	0
16 Princeton University	23,478	22,819	20,191	19,273	3,347	8,663	11,468	0
17 Univ. of Colorado	23,171	21,438	21,124	18,240	7,811	6,863	8,383	114
18 Univ of Cal Los Angeles	22,407	23,136	21,764	20,776	1,136	10,519	10,752	0
19 Michigan State University	22,015i	20,898	21,121	19,489	0i	3,302i	18,713i	0i
20 SUNY at Stony Brook	21,466	20,878	18,224	18,526	1,160	5,426	14,600	280
Total, 1st 20 insts.	921,325	826,439	736,380	716,075	150,495	191,546	450,199	129,085
21 University of Michigan	21,419	15,329	15,747	15,729	607	5,031	14,541	1,240
22 Univ of Hawaii-Manoa	19,762	17,953	17,090	14,829	15,740	2,164	1,858	0
23 University of Iowa	18,778	17,498	13,114	11,449	1,451	3,461	13,063	803
24 Yale University	18,737	15,391	15,059	15,585	1,142	7,587	9,999	9
25 Rutgers the St Univ of NJ	18,379	17,273	16,480	12,519	0	7,818	10,561	0
26 Univ of Pennsylvania	18,260	15,494	15,004	14,648	89	10,633	7,538	0
27 University of Minnesota	18,143	16,577	14,423	12,530	1,049	6,160	10,625	309
28 Texas A & M University	17,230	17,538	19,721	15,226	0	8,201	5,533	3,496
29 Columbia Univ Main Div	16,929	16,361	13,718	14,263	2,584	6,305	1,759	6,281
30 U of Houston	16,868	19,290	16,033	9,771	0	4,360	12,382	126
Total, 1st 30 insts.	1,105,830	995,143	892,769	852,624	173,157	253,266	538,058	141,349
31 Pennsylvania State Univ	16,158	16,625	14,687	13,143	2,174	9,635	3,225	1,124
32 Univ of Massachusetts	15,937	12,984	12,633	14,970	0	9,684	4,657	1,596
33 Arizona State University	15,308	14,490	12,340	10,408	253	8,054	3,021	3,980
34 University of Washington	15,182	15,333	13,381	12,021	1,663	5,789	7,730	0
35 Purdue University	15,134	14,467	13,665	13,695	0	8,690	6,444	0
36 Univ of Cal Santa Barbara	15,069	15,216	14,866	14,397	0	3,652	9,327	2,090
37 Univ of Cal Santa Cruz	14,582	12,887	12,234	10,241	8,328	2,157	3,573	524
38 Georgia Institute of Tech	14,422	15,314	20,753	15,205	283	6,796	5,929	1,414
39 Ohio State University	13,659	12,802	12,222	12,524	556	6,178	6,925	0
40 Univ of Cal Irvine	13,043	12,300	11,425	10,846	0	5,546	7,343	154
Total, 1st 40 insts.	1,254,324	1,137,561	1,030,975	980,074	186,414	319,447	596,232	152,231
41 Univ of Alaska Fairbanks	12,818	13,761	12,878	11,323e	5,015	725	6,807	271
42 Florida State University	12,297	13,839	13,089	9,324	0	4,696	7,601e	0e
43 University of Rochester	12,045	13,329	11,307	10,806	611	6,067	5,367	0
44 Northwestern University	11,847	11,770	11,884	10,174	0	7,781	4,057	9
45 University of Virginia	11,476	11,212	10,528	9,068	593	5,089	5,794	0
46 Univ. Of Tennessee System	11,398	10,736	11,143	10,451	0	4,681	6,717	0
47 University of Oregon	11,004	12,114	9,589	9,474	0	6,211	4,793	0
48 University of Pittsburgh	10,852	12,904	10,952	9,998	532	4,826	4,692	802
49 Univ of Central Florida	10,765	7,693	5,234	165	9,998	517	250	0
50 Duke University	10,690	9,085	7,864	5,942	0	3,035	7,655	0
Total, 1st 50 insts.	1,369,516	1,254,004	1,135,443	1,066,799	203,163	363,075	649,965	153,313

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-50. R&D expenditures in the physical sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Physical sciences total				1991 subfields			
	1991	1990	1989	1988	Astronomy	Chemistry	Physics	Other
51 University of Notre Dame	10,306	10,735	11,041	11,418	0	6,170	4,136	0
52 University of Florida	10,246	11,804	11,653	10,751	858	5,153	4,229	6
53 Louisiana State Univ Sys	9,912	9,184	8,781	7,756	0	4,555	4,830	527
54 VA Polytech Inst & St U	9,562	9,710	8,378	6,916	0	7,157	2,344	61
55 Boston University	9,359	8,956	6,453	5,373	657	1,756	5,378	1,568
56 Rice University	9,274	8,470	7,449	6,964	2,798	3,526	2,950	0
57 Rockefeller University	9,031	11,661	9,518	9,433	0	7,023	2,008	0
58 Wayne State University	8,896	7,900	7,230	5,828	0	6,458	2,438	0
59 University of Utah	8,859	8,115	8,633	7,879	0	6,101	2,758	0
60 Iowa St U of Sci & Tech	8,475	5,396	4,276	3,224	69	5,621	2,785	0
Total, 1st 60 insts.	1,463,436	1,345,915	1,218,855	1,142,341	207,545	416,595	683,821	155,475
61 University of Georgia	8,061	6,706	6,239	5,624	0	5,508	2,553	0
62 University of Delaware	7,996	6,869	6,397	3,844	0	3,175	1,592	3,229
63 Univ Alabama Huntsville	7,768	11,024	9,193	8,381	0	2,618	4,933	217
64 Univ of Cal Davis	7,471	7,851	7,346	6,741	0	3,128	4,343	0
65 SUNY at Buffalo	7,432	6,952	6,413	5,631	0	4,789	1,977	666
66 Univ of Southern Cal	7,349	7,463	6,107	5,549	85	5,510	1,754	0
67 N C State Univ at Raleigh	7,091	5,611	5,488	4,557	0	1,619	5,013	459
68 Univ of NC at Chapel Hill	6,965	6,481	6,508	5,782	0	5,613	1,352	0
69 Brown University	6,907	6,162	5,440	5,988	0	2,822	4,085	0
70 Univ of Ill Chicago	6,783	8,204	7,005	7,547	0	4,187	2,596	0
Total, 1st 70 insts.	1,537,259	1,419,238	1,284,991	1,201,985	207,630	455,564	714,019	160,046
71 Carnegie-Mellon Univ	6,760	7,203	7,169	7,122	0	2,873	3,115	772
72 University of Kansas	6,648	6,635	5,710	4,420	0	5,059	1,412	177
73 Vanderbilt University	6,646	6,681	7,067	5,984	0	1,547	5,099	0
74 University of Akron	6,357	4,748	4,257	3,086	0	2,084	139	4,134
75 Washington University	6,217	6,554	6,475	5,305	0	2,928	3,289	0
76 University of Mississippi	5,899	4,091	1,006	750	0	618	5,281	0
77 CUNY City College	5,879	5,423	5,559	4,752	0	2,671	3,208	0
78 University of Cincinnati	5,879	4,669	5,643	4,859	0	4,004	1,875	0
79 Univ of Sthrn Mississippi	5,864	3,314	2,844	1,829	0	5,812	52	0
80 University of Oklahoma	5,690	5,030	5,276	5,615	0	3,713	1,977	0
Total, 1st 80 insts.	1,599,098	1,473,586	1,335,997	1,245,707	207,630	486,873	739,466	165,129
81 Emory University	5,407	4,631	4,038	3,257	0	4,269	1,138	0
82 Univ of South Carolina	5,282	5,710	6,376	6,273	0	3,645	1,610	27
83 Rensselaer Polytech Inst	5,256	6,097	5,743	5,067	0	3,811	1,445	0
84 Georgetown University	5,253	3,998	4,201	3,125	0	5,039	146	68
85 Colorado State University	5,220	4,658	4,832	5,932	0	4,093	1,127	0
86 Syracuse University	5,169	5,968	5,039	4,860	0	2,334	2,819	16
87 Case Western Reserve Univ	5,146	10,022e	10,164	9,789	150	3,077	1,919	0
88 Univ of Nebraska-Lincoln	5,135	4,642	4,861	4,006	79	2,592	2,464	0
89 Univ of Missouri Columbia	5,123	3,545	1,713	1,579	0	1,754	3,369	0
90 Oklahoma State University	5,102	4,837	3,811	7,861	0	1,158	3,441	503
Total, 1st 90 insts.	1,651,191	1,527,694	1,386,775	1,297,456	207,859	518,645	758,944	165,743
91 Univ of Texas at Dallas	5,058	5,314	5,738	5,678	0	1,286	3,522	250
92 Utah State University	5,030	4,431	5,662	6,050	0	1,749	3,281	0
93 Lehigh University	4,995	5,238	5,585	6,043	0	3,694	1,301	0
94 Kent State University	4,681	3,375	2,656	2,579	0	446	1,082	3,153
95 New York University	4,535	3,110	3,056	3,077	0	3,012	1,523	0
96 The University of Alabama	4,516	3,910	2,625	2,148	285	1,967	2,192	72
97 Catholic Univ of America	4,362	4,305	3,972	3,662	0	791	3,571	0
98 Univ of Cal Riverside	4,299	4,044	4,146	5,096	0	2,215	2,084	0
99 UT MD Anderson Cancer Ctr	4,183	4,106	3,606	3,347	0	0	4,183	0
100 Univ of Ark Fayetteville	4,114	3,496	3,708	3,161	0	2,541	1,573	0
Total, 1st 100 insts.	1,696,964	1,569,023	1,427,529	1,338,297	208,144	536,346	783,256	169,218
Total, all other sampled insts.	214,337	208,706	192,127	207,910	1,985	117,220	91,352	3,780
Estimated total non-sampled insts.	25,557	20,735	18,299	0	20	16,433	8,430	674

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-51. Federally financed R&D expenditures in the physical sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Physical sciences total				1991 subfields			
	1991	1990	1989	1988	Astronomy	Chemistry	Physics	Other
Total, all institutions	1,378,591	1,302,889	1,188,509	1,152,342	135,362	449,644	677,582	116,004
1 Johns Hopkins Univ	117,022	91,640	84,556	95,449	23,343	6,044	78,617	9,018
2 Mass Inst of Technology	84,110	82,688	74,896	72,927	3,579	14,549	65,982	0
3 Stanford University	50,320	50,717	46,501	51,859	0	7,452	3,833	39,035
4 Univ of Cal Berkeley	47,227	42,182	37,355	36,851	3,811	12,210	31,206	0
5 California Inst of Tech	43,033	37,172	35,366	34,797	8,155	12,006	22,872	0
6 Univ of Cal San Diego	36,411	28,689	21,204	21,923	14,218	7,949	11,583	2,661
7 Univ of MD College Park	35,925	30,835	25,029	23,542	0	4,566	17,715	13,644
8 Univ of Texas at Austin	35,841	22,478	20,081	20,050	4,735	7,881	11,397	11,828
9 Cornell University	35,556	35,290	33,105	33,693	2,128	8,365	22,675	2,388
10 University of Arizona	33,633	32,929	23,882	24,717	21,737	3,580	7,918	398
Total, 1st 10 insts.	519,078	452,620	401,975	415,808	81,706	84,602	273,798	78,972
11 University of Ill Urbana	31,456	31,290	18,085	16,893	922	6,484	9,651	14,399
12 Univ of Wis-Madison	24,321	22,378	20,691	19,774	3,554	5,739	12,106	2,922
13 University of Chicago	22,339	23,941	22,281	20,069	3,086	8,146	11,107	0
14 Harvard University	22,080	24,954	22,932	19,334	2,969	10,972	7,928	211
15 Univ of Cal Los Angeles	20,161	21,485	19,521	17,988	998	9,327	9,836	0
16 Indiana University	18,712	17,818	18,212	18,192	298	5,173	13,243	0
17 Univ. of Colorado	17,886	18,187	17,416	15,270	5,405	5,422	6,962	97
18 Princeton University	17,249	16,288	15,037	14,636	2,114	5,794	9,341	0
19 Yale University	16,599	13,814	13,283	13,887	898	6,521	9,180	0
20 Univ of Pennsylvania	15,434	14,495	13,675	13,250	51	8,168	7,215	0
Total, 1st 20 insts.	725,315	657,270	583,088	585,101	101,999	156,348	370,367	96,601
21 Columbia Univ Main Div	15,341	15,497	13,152	13,699	2,582	5,944	1,759	5,056
22 Michigan State University	15,337i	14,485	14,203	13,627	0i	2,109i	13,228i	0i
23 University of Iowa	14,983	14,360	11,033	9,058	1,248	2,137	11,233	365
24 SUNY at Stony Brook	14,839	15,165	12,660	12,740	930	3,940	9,969	0
25 Univ of Hawaii-Manoa	14,637	12,905	12,878	11,329	11,215	1,627	1,795	0
26 Univ of Cal Santa Barbara	13,422	13,336	13,249	12,922	0	3,201	8,344	1,877
27 University of Michigan	13,067	10,987	11,186	12,214	542	3,423	8,758	344
28 University of Minnesota	12,595	12,563	11,064	9,265	701	5,004	6,890	0
29 Univ of Cal Irvine	12,106	11,110	10,613	10,482	0	5,226	6,801	79
30 University of Washington	12,098	12,548	11,169	9,911	972	3,796	7,330	0
Total, 1st 30 insts.	863,740	790,226	704,295	700,348	120,189	192,755	446,474	104,322
31 Purdue University	11,732	10,897	10,536	10,776	0	7,086	4,646	0
32 University of Rochester	11,243	12,328	10,424	9,729	347	5,650	5,246	0
33 U of Houston	10,125	9,692	7,928	5,480	0	1,815	8,281	29
34 Pennsylvania State Univ	10,095	11,153	10,202	9,569	1,698	6,630	1,722	45
35 Rutgers the St Univ of NJ	9,458	9,765	10,164	6,157	0	5,426	4,032	0
36 Duke University	9,007	7,344	6,555	4,789	0	1,750	7,257	0
37 University of Virginia	8,829	8,134	7,722	6,847	525	4,072	4,232	0
38 Ohio State University	8,780	8,063	8,188	8,896	354	4,407	4,019	0
39 Northwestern University	8,748	9,357	9,029	7,902	0	5,462	3,286	0
40 Univ of Massachusetts	8,707	8,432	8,275	10,682	0	5,300	3,407	0
Total, 1st 40 insts.	960,464	885,391	793,318	781,175	123,113	240,353	492,602	104,396
41 University of Notre Dame	8,643	8,904	9,376	10,341	0	5,599	3,044	0
42 Texas A & M University	8,616	8,021	8,863	8,482	0	4,395	4,089	132
43 Univ of Alaska Fairbanks	8,540	7,950	7,298	6,417e	3,357	227	4,950	6
44 University of Pittsburgh	8,527	10,141	8,547	8,678	291	3,958	3,586	692
45 Georgia Institute of Tech	8,281	8,635	11,650	8,001	162	3,902	3,405	812
46 Boston University	8,253	8,314	6,179	5,018	521	1,423	4,775	1,534
47 University of Oregon	7,952	8,895	7,244	7,444	0	4,751	3,201	0
48 Rice University	7,199	6,640	5,839	5,382	2,553	2,251	2,395	0
49 Univ of Southern Cal	7,168	7,039	5,587	5,218	64	5,427	1,677	0
50 Arizona State University	7,056	6,697	7,169	5,752	15	3,696	2,235	1,110
Total, 1st 50 insts.	1,040,699	966,627	871,070	851,908	130,076	275,962	525,959	108,682

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-51. Federally financed R&D expenditures in the physical sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Physical sciences total				1991 subfields			
	1991	1990	1989	1988	Astronomy	Chemistry	Physics	Other
51 University of Utah	6,982	6,099	6,124	6,180	0	4,688	2,294	0
52 Univ of Cal Santa Cruz	6,507	5,810	5,694	5,066	1,519	1,730	2,852	406
53 Univ of Cal Davis	6,500	6,909	6,603	5,522	0	2,632	3,868	0
54 Univ Alabama Huntsville	6,322	9,339	7,282	5,381	0	2,208	4,004	110
55 Univ. Of Tennessee System	6,284	6,408	6,292	5,941	0	2,272	4,012	0
56 Florida State University	5,940	6,799	5,319	4,018	0	1,649	4,291e	0e
57 Vanderbilt University	5,846	6,068	6,022	4,446	0	1,099	4,747	0
58 Univ of NC at Chapel Hill	5,840	5,400	5,479	5,071	0	4,980	860	0
59 University of Florida	5,790	7,068	6,539	6,717	686	2,802	2,302	0
60 Carnegie-Mellon Univ	5,513	5,944	6,015	6,104	0	2,472	2,864	177
Total, 1st 60 insts.	1,102,223	1,032,471	932,439	906,354	132,281	302,514	558,053	109,375
61 Univ of Sthrn Mississippi	5,462	2,880	2,300	1,307	0	5,435	27	0
62 CUNY City College	5,444	4,905	5,001	4,171	0	2,671	2,773	0
63 University of Delaware	5,205	4,325	3,758	2,369	0	1,877	1,037	2,291
64 Washington University	5,195	5,231	5,625	4,229	0	2,336	2,859	0
65 University of Mississippi	4,966	3,642	845	710	0	587	4,379	0
66 Louisiana State Univ Sys	4,758	4,912	4,744	4,308	0	1,729	2,806	223
67 Brown University	4,480	5,355	4,817	5,579	0	1,972	2,508	0
68 VA Polytech Inst & St U	4,480	4,648	4,064	3,962	0	2,958	1,522	0
69 SUNY at Buffalo	4,332	4,129	3,681	3,420	0	2,881	1,132	319
70 Emory University	4,163	3,872	3,135	2,829	0	3,290	873	0
Total, 1st 70 insts.	1,150,708	1,076,370	970,409	939,238	132,281	328,250	577,969	112,208
71 Rockefeller University	4,149	5,365	4,477	3,840	0	3,289	860	0
72 Georgetown University	4,146	3,212	3,322	2,286	0	3,963	125	58
73 Univ of Cal Riverside	4,068	3,848	3,866	4,638	0	1,994	2,074	0
74 New York University	3,983	2,745	2,784	2,778	0	2,453	1,510	0
75 Colorado State University	3,960	3,735	3,983	5,182	0	3,146	814	0
76 Univ of Ill Chicago	3,800	5,607	4,880	5,144	0	2,222	1,578	0
77 Case Western Reserve Univ	3,735	5,807	6,932	7,076	130	2,135	1,470	0
78 Syracuse University	3,732	4,204	3,312	3,258	0	1,520	2,197	15
79 Catholic Univ of America	3,639	3,906	3,640	3,444	0	748	2,891	0
80 Univ of South Carolina	3,438	3,936	3,674	3,803	0	2,540	898	0
Total, 1st 80 insts.	1,189,338	1,118,735	1,011,279	980,687	132,411	352,260	592,386	112,281
81 University of Cincinnati	3,235	3,007	3,301	2,628	0	2,241	994	0
82 Alabama A & M University	3,210	2,716	1,984	1,062	0	87	3,050	73
83 Univ of Nebraska-Lincoln	3,189	3,008	3,506	3,227	58	1,952	1,179	0
84 University of Georgia	3,184	2,492	2,654	2,240	0	2,198	986	0
05 N C State Univ at Raleigh	3,092	3,797	2,616	2,220	0	719	2,373	0
86 Univ of Texas at Dallas	3,039	3,718	4,343	3,691	0	636	2,393	10
87 Utah State University	3,033	3,039	3,652	4,676	0	445	2,588	0
88 Boston College	2,901	2,649	2,207	2,189	0	2,192	709	0
89 Iowa St U of Sci & Tech	2,797	2,157	1,746	1,582	0	1,843	954	0
90 Kans St U - Ag & App Sci	2,766	2,857	3,297	3,220	0	1,150	1,616	0
Total, 1st 90 insts.	1,219,784	1,148,175	1,040,585	1,007,422	132,469	365,723	609,228	112,364
91 Brandeis University	2,718	2,616	2,733	2,871	0	1,485	1,233	0
92 University of Denver	2,610i	2,417	2,246	1,029	0i	976i	1,634i	0i
93 Lehigh University	2,605	2,744	2,802	2,861	0	1,780	825	0
94 Clark Atlanta University	2,588	1,295i	0e	--	0	1,834	754	0
95 Oregon State University	2,579	2,183	2,606	2,058	0	1,660	919	0
96 University of Kansas	2,559	2,788	2,457	1,548	0	1,788	771	0
97 Kent State University	2,521	1,861	1,297	1,444	0	336	794	1,391
98 Rensselaer Polytech Inst	2,452	2,966	2,633	2,542	0	1,778	674	0
99 College of William & Mary	2,444	2,135	1,818	1,865	0	297	2,147	0
100 Hampton University	2,396	1,854	1,529	--	0	129	2,267	0
Total, 1st 100 insts.	1,245,256	1,171,034	1,060,906	1,023,640	132,469	377,786	621,246	113,755
Total, all other sampled insts.	120,848	121,497	117,758	128,702	2,893	64,057	51,449	2,249
Estimated total non-sampled insts.	12,687	10,358	9,843	0	0	7,801	4,887	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-52. Total and federally financed R&D expenditures in chemistry at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	669,999	649,798	607,812	565,318	449,644	444,037	420,912	402,876
1 Univ of Texas at Austin	16,513	13,259	11,484	10,943	7,881	6,723	6,120	6,443
2 Mass Inst of Technology	16,426	17,109	15,031	13,287	14,549	15,129	13,333	11,987
3 California Inst of Tech	13,931	10,667	9,235	9,931	12,006	8,629	7,459	8,769
4 Univ of Cal Berkeley	13,906	13,804	12,663	14,285	12,210	12,219	11,540	12,998
5 Harvard University	12,384	13,114	11,856	9,886	10,972	11,855	10,594	9,272
6 Cornell University	10,825	10,042	10,217	10,472	8,365	7,211	7,458	8,269
7 Univ of Pennsylvania	10,633	8,077	7,760	7,292	8,168	7,330	7,046	6,337
8 Univ of Cal Los Angeles	10,519	11,217	9,855	9,519	9,327	10,216	9,024	8,885
9 Univ of Massachusetts	9,684	9,245	2,988	5,280	5,300	5,494	1,326	3,296
10 Pennsylvania State Univ	9,635	9,148	8,616	7,739	6,630	6,429	6,515	5,957
Total, 1st 10 insts.	124,456	115,682	99,705	98,634	95,408	91,235	80,415	82,213
11 University of Ill Urbana	9,457	9,230	9,208	8,647	6,484	6,563	6,566	6,193
12 University of Chicago	8,967	9,331	9,333	8,046	8,146	8,524	8,621	7,235
13 Univ of Wis-Madison	8,878	8,937	8,326	7,282	5,739	6,041	5,505	4,939
14 Stanford University	8,841	9,693	10,098	10,547	7,452	8,839	8,878	9,423
15 Univ of Cal San Diego	8,811	8,120	6,487	6,780	7,949	7,422	5,757	6,161
16 Purdue University	8,690	8,672	8,769	8,615	7,086	6,893	7,102	7,120
17 Princeton University	8,663	9,099	8,873	8,087	5,794	6,104	5,681	5,812
18 Univ of MD College Park	8,415	10,977	9,732	8,545	4,566	4,774	3,844	3,793
19 Texas A & M University	8,201	8,046	9,808	8,785	4,395	3,716	4,408	4,945
20 Arizona State University	8,054	7,967	5,260	4,306	3,696	3,626	3,172	2,813
Total, 1st 20 insts.	211,433	205,754	185,599	178,274	156,715	153,737	139,949	140,647
21 Rutgers the St Univ of NJ	7,818	7,812	7,905	5,926	5,426	6,016	6,572	3,442
22 Northwestern University	7,781	7,219	7,661	6,644	5,462	5,465	5,577	4,955
23 Yale University	7,587	6,037	5,915	6,869	6,521	5,256	5,011	5,927
24 Indiana University	7,324	7,344	7,927	7,991	5,173	5,225	6,127	6,354
25 VA Polytech Inst & St U	7,157	6,321	5,155	4,735	2,958	2,522	2,194	2,417
26 Rockefeller University	7,023	9,248	7,471	6,975	3,289	4,331	3,713	3,082
27 Univ. of Colorado	6,863	6,041	6,587	5,637	5,422	5,218	5,418	4,603
28 Georgia Institute of Tech	6,796	5,215	5,380	5,989	3,902	2,941	3,020	3,574
29 Johns Hopkins Univ	6,564	5,435	5,152	5,211	6,044	4,994	4,824	4,830
30 Wayne State University	6,458	5,455	5,557	4,582	1,500	1,798	2,989	2,151
Total, 1st 30 insts.	282,804	271,881	250,309	238,833	202,412	197,503	185,394	181,982
31 Columbia Univ Main Div	6,305	5,858	4,721e	4,605e	5,944	5,540	4,344e	4,246e
32 University of Oregon	6,211	6,760	5,501	5,550	4,751	5,182	4,435	4,519
33 Ohio State University	6,178	6,225	6,771	7,568	4,407	4,085	4,445	5,437
34 University of Notre Dame	6,170	6,348	6,660	7,004	5,599	5,667	5,983	6,557
35 University of Minnesota	6,160	6,663	5,863	5,232	5,004	5,857	5,054	4,156
36 University of Utah	6,101	5,089	5,653	4,600	4,688	3,746	3,872	3,614
37 University of Rochester	6,067	6,537	4,762	4,437	5,650	5,998	4,327	3,936
38 Univ of Sthrn Mississippi	5,812	3,266	2,807	1,691	5,435	2,850	2,285	1,198
39 University of Washington	5,789	6,057	5,192	4,338	3,796	4,139	3,756	2,904
40 Iowa St U of Sci & Tech	5,621	3,851	2,910	2,094	1,843	1,331	1,004	956
Total, 1st 40 insts.	343,218	328,535	301,149	285,952	249,529	241,898	224,899	219,505
41 Univ of NC at Chapel Hill	5,613	5,310	5,171	4,476	4,980	4,651	4,534	4,193
42 Univ of Cal Irvine	5,546	4,835	3,910	4,534	5,226	4,437	3,685	4,376
43 University of Arizona	5,531	5,034	4,532	3,934	3,580	3,210	3,044	2,885
44 Univ of Southern Cal	5,510	5,667	4,374	3,832	5,427	5,358	3,986	3,568
45 University of Georgia	5,508	4,453	4,091	3,531	2,198	1,651	1,866	1,403
46 SUNY at Stony Brook	5,426	4,897	4,754	5,010	3,940	3,816	3,610	3,460
47 University of Florida	5,153	5,396	5,061	5,030	2,802	2,905	2,820	3,168
48 University of Virginia	5,089	5,281	5,096	4,153	4,072	4,038	4,165	3,419
49 University of Kansas	5,059	5,450	4,952	3,845	1,788	2,099	2,030	1,239
50 Georgetown University	5,039	3,860	3,904	2,878	3,963	3,088	3,113	2,148
Total, 1st 50 insts.	396,692	378,718	346,994	327,175	287,505	277,151	257,752	249,364

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-52. Total and federally financed R&D expenditures in chemistry at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 University of Michigan	5,031	3,735	3,788	3,879	3,423	2,786	3,022	3,310
52 University of Pittsburgh	4,826	5,832	5,736	5,598	3,958	4,721	4,558	4,803
53 SUNY at Buffalo	4,789	4,770	4,844	3,903	2,881	2,955	2,782	2,329
54 Florida State University	4,696	5,345	5,382	4,308	1,649	1,320	1,997	1,402
55 Univ. Of Tennessee System	4,681	4,114	4,777	4,335	2,272	2,441	2,985	2,541
56 Louisiana State Univ Sys	4,555	4,348	4,698	3,834	1,729	1,887	2,264	1,769
57 U of Houston	4,360	4,724	4,908	3,693	1,815	1,934	2,118	1,983
58 Emory University	4,289	4,228	3,581	2,770	3,290	3,509	2,719	2,362
59 Univ of Ill Chicago	4,187	4,494	3,721	3,020	2,222	2,930	2,612	1,915
60 Colorado State University	4,093	3,683	4,204	4,950	3,146	2,998	3,457	4,280
Total, 1st 60 insts.	442,179	423,991	392,433	367,465	313,890	304,632	286,266	276,058
61 University of Cincinnati	4,004	3,605	4,655	4,008	2,241	2,151	2,755	2,088
62 Rensselaer Polytech Inst	3,811	4,551	4,156	3,737	1,778	2,214	2,050	1,875
63 University of Oklahoma	3,713	3,287	3,968	3,765	1,443	1,221	1,775	1,740
64 Lehigh University	3,694	3,770	3,959	4,510	1,760	1,745	1,817	1,921
65 Univ of Cal Santa Barbara	3,652	4,399	3,714	3,539	3,201	3,869	3,242	3,196
66 Univ of South Carolina	3,645	4,307	4,466	4,078	2,540	2,992	2,905	2,839
67 Rice University	3,526	3,337	3,144	2,675	2,251	2,330	2,133	1,636
68 University of Iowa	3,461	4,294	3,277	2,482	2,137	2,929	2,364	1,718
69 Michigan State University	3,302i	3,138	3,602	2,690	2,109i	1,992	2,363	1,833
70 University of Delaware	3,175	2,381	2,795	2,781	1,877	1,472	1,747	1,921
Total, 1st 70 insts.	478,162	461,060	430,169	401,730	335,247	327,547	309,417	298,825
71 Univ of Cal Davis	3,128	3,582	3,693	2,550	2,632	2,996	3,386	2,255
72 Case Western Reserve Univ	3,077	8,252e	8,233	7,996	2,135	4,246	5,161	5,433
73 Duke University	3,035	2,974	2,458	2,631	1,750	1,677	1,573	1,828
74 New York University	3,012	1,693	1,382	1,163	2,453	1,397	1,288	1,062
75 Washington University	2,928	3,436	3,741	2,940	2,336	2,759	3,088	2,291
76 University of Toledo	2,927	670	470	402	982	194	243	222
77 Carnegie-Mellon Univ	2,873	3,239	3,854	3,932	2,472	2,770	2,917	3,001
78 Brown University	2,822	2,636	2,546	2,505	1,972	2,254	2,228	2,416
79 CUNY City College	2,671	2,268	2,055	1,624	2,671	2,198	1,959	1,535
80 Univ Alabama Huntsville	2,618	4,317	2,972	1,493	2,208	3,880	2,414	1,059
Total, 1st 80 insts.	507,253	494,127	461,573	428,966	356,838	351,918	333,674	317,927
81 Univ of Nebraska-Lincoln	2,592	2,658	2,882	2,393	1,952	1,925	2,392	1,939
82 Oregon Grad Inst Sci/Tech	2,580	2,300	1,995	1,766	2,125	2,004	1,700	1,540
83 Univ of Ark Fayetteville	2,541	2,110	1,980	2,373	1,026	948	835	1,007
84 Oregon State University	2,522	2,647	3,565	3,461	1,860	1,472	1,794	1,539
85 CUNY Hunter College	2,484	2,307	2,018	1,534	1,869	1,668	1,507	1,208
86 Texas Tech University	2,451	2,335	2,067	1,693	852	586	618	581
87 Clark Atlanta University	2,440	1,221i	0e	--	1,834	918i	0e	--
88 Syracuse University	2,334	2,861	2,313	2,159	1,520	1,945	1,602	1,602
89 Boston College	2,315	2,291	1,688	1,577	2,192	1,856	1,617	1,526
90 Univ of Cal Riverside	2,215	2,076	2,297	3,233	1,994	1,890	2,040	2,844
Total, 1st 90 insts.	531,727	516,933	482,378	449,155	373,862	367,130	347,779	331,713
91 Univ of Hawaii-Manoa	2,164	2,062	2,316	1,806	1,827	1,583	1,990	1,431
92 Univ of Cal Santa Cruz	2,157	1,640	1,356	1,120	1,730	1,398	1,102	843
93 University of Akron	2,084	2,001	1,815	949	738e	769	201	273
94 Auburn University	2,072	2,260	740	617	361	361	515	363
95 Montana State University	2,063	2,178	2,176	2,221	1,061	790	1,390	1,572
96 Brandeis University	2,041	1,923	2,197	2,201	1,485	1,410	1,552	1,850
97 SUNY at Binghamton	2,011	1,634	1,435	1,394	656	674	600	713
98 Clemson University	1,993	1,857	1,467	1,400	426	503	359	435
99 University of Connecticut	1,977	2,022	1,985	4,279	504	702	695	1,098
100 The University of Alabama	1,967	2,195	2,039	1,675	953	1,386	1,431	1,147
Total, 1st 100 insts.	552,256	536,725	499,904	466,626	383,403	376,706	357,614	341,438
Total, all other sampled insts.	101,310	98,897	95,033	98,692	58,440	60,250	56,484	61,438
Estimated total non-sampled insts.	16,433	14,176	12,875	0	7,801	7,081	6,814	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-53. Total and federally financed R&D expenditures in physics at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	883,038	831,939	774,957	731,655	677,582	642,844	597,887	574,281
1 Johns Hopkins Univ	78,983	65,697	68,645	78,741	78,617	65,287	67,707	77,885
2 Mass Inst of Technology	74,892	71,674	66,183	63,475	65,982	63,981	57,879	57,771
3 Univ of Cal Berkeley	34,707	30,565	26,457	24,249	31,206	26,759	22,874	21,167
4 Univ of MD College Park	33,084	29,200	25,257	22,126	17,715	14,512	13,007	12,089
5 Cornell University	26,195	27,415	25,895	25,283	22,675	22,913	21,071	20,340
6 California Inst of Tech	24,028	22,702	22,541	20,115	22,872	21,255	21,007	18,861
7 Michigan State University	18,713i	17,760	17,516	16,799	13,228i	12,493	11,840	11,794
8 Univ of Texas at Austin	18,033	19,009	16,047	15,190	11,397	11,638	9,995	9,898
9 University of Arizona	16,123	18,532	17,873	18,547	7,918	8,254	7,582	9,264
10 Indiana University	15,823	14,759	13,580	12,985	13,243	12,322	11,678	11,514
Total, 1st 10 insts.	340,581	317,313	299,994	297,510	284,853	259,414	244,640	250,583
11 SUNY at Stony Brook	14,600	15,038	12,681	12,571	9,969	10,690	8,602	8,681
12 University of Michigan	14,541	9,818	9,928	9,846	8,758	7,401	7,597	8,218
13 Univ of Wis-Madison	14,150	11,963	11,459	11,408	12,106	10,397	9,934	9,777
14 University of Iowa	13,063	11,476	8,851	8,054	11,233	9,945	7,802	6,606
15 Univ of Cal San Diego	12,419	9,377	7,904	6,630	11,583	8,531	7,135	5,982
16 U of Houston	12,382	11,149	10,973	6,064	8,281	7,758	5,810	3,494
17 University of Chicago	11,711	13,189	11,868	8,079	11,107	12,577	11,302	7,886
18 University of Ill Urbana	11,511	12,478	12,655	11,983	9,651	10,706	10,733	10,022
19 Princeton University	11,468	10,976	9,080	8,733	9,341	8,357	7,591	7,104
20 Univ of Cal Los Angeles	10,752	10,782	10,826	10,164	9,836	10,192	9,570	8,162
Total, 1st 20 insts.	467,178	433,559	406,219	391,042	386,718	355,968	330,716	326,515
21 University of Minnesota	10,625	8,225	7,036	5,897	6,890	5,475	5,009	4,222
22 Rutgers the St Univ of NJ	10,561	9,461	8,575	6,593	4,032	3,749	3,592	2,715
23 Harvard University	10,270	10,363	9,169	7,356	7,928	8,236	7,664	7,107
24 Yale University	9,999	8,264	8,238	8,079	9,180	7,756	7,510	7,521
25 Univ of Cal Santa Barbara	9,327	8,529	8,779	7,548	8,344	7,498	7,797	6,575
26 Univ. of Colorado	8,383	7,151	6,970	6,082	6,962	6,148	5,969	5,244
27 University of Washington	7,730	7,785	6,971	6,427	7,330	7,545	6,605	6,312
28 Duke University	7,655	6,111	5,406	3,311	7,257	5,667	4,982	2,961
29 Florida State University	7,601e	8,494	7,707	5,016	4,291e	5,479	3,322	2,616
30 Univ of Pennsylvania	7,538	7,320	7,149	7,081	7,215	7,084	6,553	6,643
Total, 1st 30 insts.	556,867	515,262	482,219	454,432	456,147	420,603	389,719	378,431
31 Univ of Cal Irvine	7,343	7,317	7,379	6,228	6,801	6,842	6,912	6,090
32 Ohio State University	6,925	6,268	5,225	4,874	4,019	3,750	3,633	3,385
33 Univ of Alaska Fairbanks	6,807	5,967	6,258	5,502e	4,950	3,593	3,781	3,325e
34 Univ. Of Tennessee System	6,717	6,622	6,366	6,116	4,012	3,967	3,307	3,400
35 Purdue University	6,444	5,795	4,896	5,080	4,646	4,004	3,434	3,656
36 Georgia Institute of Tech	5,929	9,783	13,781	7,676	3,405	5,516	7,736	3,508
37 University of Virginia	5,794	5,280	4,908	4,518	4,232	3,555	3,146	3,115
38 Texas A & M University	5,533	7,209	7,098	5,208	4,089	4,106	3,947	3,344
39 Boston University	5,378	5,531	3,573	2,822	4,775	5,193	3,475	2,675
40 University of Rochester	5,367	6,205	6,131	5,997	5,246	5,955	5,845	5,562
Total, 1st 40 insts.	619,104	581,239	547,834	508,453	502,322	466,884	434,935	416,491
41 University of Mississippi	5,281	3,495	506	490	4,379	3,082	405	469
42 Vanderbilt University	5,099	5,219	5,837	4,395	4,747	4,930	5,102	3,283
43 N C State Univ at Raleigh	5,013	3,989	3,748	3,198	2,373	2,900	1,996	1,850
44 Univ Alabama Huntsville	4,933	6,527	6,218	6,231	4,004	5,294	4,868	3,770
45 Louisiana State Univ Sys	4,830	4,454	3,769	3,488	2,806	2,906	2,477	2,527
46 University of Oregon	4,793	5,354	4,088	3,924	3,201	3,713	2,809	2,925
47 University of Pittsburgh	4,692	5,139	3,891	3,506	3,586	3,802	2,955	3,133
48 Univ of Massachusetts	4,657	3,673	3,734	3,779	3,407	2,938	2,658	2,972
49 Stanford University	4,354	4,528	6,135	7,221	3,833	4,344	5,829	6,802
50 Univ of Cal Davis	4,343	4,269	3,653	4,191	3,868	3,913	3,217	3,267
Total, 1st 50 insts.	667,099	627,886	589,413	548,876	538,526	504,706	467,251	447,489

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-53. Total and federally financed R&D expenditures in physics at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 University of Florida	4,229	5,157	4,720	4,121	2,302	3,208	3,236	2,572
52 UT MD Anderson Cancer Ctr	4,183	4,106	3,606	3,347	1,966	1,860	2,103	2,137
53 University of Notre Dame	4,136	4,387	4,381	4,414	3,044	3,237	3,393	3,784
54 Brown University	4,085	3,526	2,894	3,483	2,508	3,101	2,589	3,163
55 Northwestern University	4,057	4,541	4,208	3,522	3,286	3,892	3,452	2,947
56 Univ of Cal Santa Cruz	3,573	3,482	3,447	3,001	2,852	3,042	3,056	2,661
57 Catholic Univ of America	3,571	3,638	3,231	3,263	2,891	3,281	2,908	3,055
58 Univ of Texas at Dallas	3,522	4,408	4,616	4,585	2,393	2,916	3,784	2,980
59 Alabama A & M University	3,517	3,094	2,390	939	3,050	2,592	1,939	815
60 Oklahoma State University	3,441	2,634	1,875	2,623	822	1,082	1,183	1,012
Total, 1st 60 insts.	705,413	666,859	624,781	582,174	563,640	532,917	494,894	472,615
61 Univ of Missouri Columbia	3,369	1,974	690	681	702	298	338	347
62 Washington University	3,289	3,118	2,734	2,365	2,859	2,472	2,537	1,938
63 Utah State University	3,281	3,209	3,283	4,124	2,588	2,671	2,814	3,697
64 Pennsylvania State Univ	3,225	3,365	2,679	1,878	1,722	2,128	1,830	1,517
65 CUNY City College	3,208	3,155	3,504	3,128	2,773	2,707	3,042	2,636
66 Carnegie-Mellon Univ	3,115	3,338	3,201	3,058	2,864	3,079	3,033	2,976
67 Northeastern University	3,076	2,080	2,250	1,965	1,974i	1,726	1,962	1,748
68 Arizona State University	3,021	3,043	2,995	2,848	2,235	2,196	2,289	1,718
69 Rice University	2,950	2,682	1,953	2,013	2,395	2,159	1,583	1,689
70 Syracuse University	2,819	2,986	2,599	2,491	2,197	2,141	1,591	1,452
Total, 1st 70 insts.	736,766	695,809	650,669	606,725	585,949	554,494	515,913	492,333
71 College of William & Mary	2,815	2,442	1,642	1,696	2,147	1,805	1,500	1,553
72 Iowa St U of Sci & Tech	2,785	1,476	1,301	1,057	954	826	742	626
73 University of Utah	2,758	3,026	2,980	3,279	2,294	2,353	2,252	2,566
74 Univ of Ill Chicago	2,596	3,710	3,284	4,527	1,578	2,677	2,268	3,229
75 University of Georgia	2,553	2,253	2,148	2,093	986	841	788	837
76 Univ of Nebraska-Lincoln	2,464	1,961	1,901	1,545	1,179	1,065	1,068	1,232
77 Wayne State University	2,438	2,445	1,673	1,246	449	506	594	529
78 University of Denver	2,356	1,853	1,575	1,644	1,634i	1,519	1,400	743
79 VA Polytech Inst & St U	2,344	2,890	2,586	2,181	1,522	1,872	1,674	1,545
80 US Naval Postgrad School	2,282	2,477	2,261	2,168	2,279	2,443	2,204	2,168
Total, 1st 80 insts.	762,157	720,342	672,020	628,161	600,971	570,401	530,403	507,361
81 Hampton University	2,267	1,424	1,398	--	2,267	1,424	1,398	--
82 The University of Alabama	2,192	1,272	192	194	585	360	122	84
83 Clemson University	2,104	1,710	1,385	1,464	691	586	363	316
84 Univ of Cal Riverside	2,084	1,968	1,849	1,863	2,074	1,958	1,826	1,794
85 Rockefeller University	2,008	2,413	2,047	2,458	860	1,034	764	758
86 SUNY at Buffalo	1,977	1,564	1,159	1,243	1,132	776	600	803
87 University of Oklahoma	1,977	1,743	1,308	1,850	657	515	443	574
88 Case Western Reserve Univ	1,919	1,770e	1,706	1,557	1,470	1,561	1,546	1,421
89 University of Cincinnati	1,875	1,064	988	851	994	856	546	540
90 University of Lowell	1,872	1,647	1,314	1,293	1,537	890	968	1,031
Total, 1st 90 insts.	782,432	736,917	685,386	640,934	613,238	580,361	538,979	514,682
91 Univ of Hawaii-Manoa	1,858	1,660	1,673	1,498	1,795	1,563	1,535	1,465
92 Auburn University	1,828	1,498	973	916	990	663	457	562
93 University of New Mexico	1,805	1,724	1,932	1,734	1,200	1,258	1,369	1,307
94 Kans St U - Ag & App Sci	1,760	2,096	2,485	2,647	1,616	1,920	2,271	2,147
95 Columbia Univ Main Div	1,759	1,618	1,684	1,310	1,759	1,618	1,571	1,167
96 Univ of Southern Cal	1,754	1,694	1,612	1,646	1,677	1,616	1,510	1,597
97 Temple University	1,689	2,133	2,050	1,802	1,032	1,021	733	523
98 Univ of South Carolina	1,610	1,261	1,378	1,595	898	837	694	794
99 University of Delaware	1,592	1,321	1,098	1,063	1,037	920	695	448
100 Univ of Ark Fayetteville	1,573	1,386	1,728	788	381	338	319	288
Total, 1st 100 insts.	799,660	753,308	701,979	655,933	625,623	592,115	550,133	524,980
Total, all other sampled insts.	74,948	72,547	68,797	75,722	47,072	47,453	45,110	49,301
Estimated total non-sampled insts.	8,430	6,084	4,181	0	4,887	3,276	2,644	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-54. R&D expenditures in the environmental sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Environmental sciences total				1991 subfields			
	1991	1990	1989	1988	Atmospheric	Earth sciences	Oceanography	Other
Total, all institutions	1,119,904	1,072,800	1,009,468	889,075	176,446	380,034	396,403	167,021
1 Univ of Cal San Diego	70,038	73,805	75,600	70,164	0	17,846	52,192	0
2 Texas A & M University	69,272	64,027	52,220	56,249	704	5,062	57,404	6,102
3 Woods Hole Ocngrphic Inst	64,814i	60,404	65,436	47,100	4,641i	21,681i	16,789i	21,703i
4 Johns Hopkins Univ	39,546	41,412	43,970	32,973	9,349	2,786	16,011	11,400
5 Univ of Alaska Fairbanks	31,485	24,879	21,766	19,138e	757	10,462	20,166	100
6 Columbia Univ Main Div	29,777	24,529	29,962	29,662	0	0	29,777	0
7 Univ of Texas at Austin	28,919	25,285	20,919	23,440	0	19,584	9,335	0
8 University of Ill Urbana	25,670	23,497	20,702	18,205	1,260	21,613	0	2,797
9 Univ. of Colorado	25,506	23,643	22,512	22,730	13,471	8,675	1,291	2,071
10 University of Washington	22,771	21,389	19,198	20,316	6,871	4,844	10,836	220
Total, 1st 10 insts.	407,800	382,870	372,305	339,977	37,053	112,553	213,801	44,393
11 Univ of Wis-Madison	21,194	22,033	20,869	20,640	12,821	2,198	2,736	3,439
12 Oregon State University	21,144	18,623	20,097	19,629	882	1,130	19,132	0
13 Univ of Hawaii-Manoa	20,168	24,188	23,005	19,907	32	16,394	2,353	1,389
14 University of Miami	19,149	18,626	16,132	14,065	9,096	16	7,098	2,939
15 University of Michigan	17,742	17,154	16,142	14,600	9,425	2,852	1,302	4,163
16 Univ of Rhode Island	17,442	18,944	14,917i	15,048	1,552	193	15,697	0
17 California Inst of Tech	16,627	15,957	14,391	12,482	0	16,021	0	606
18 Louisiana State Univ Sys	16,303	14,845	14,329	14,340	0	4,504	8,647	3,152
19 U of MD Center For EES	16,205	15,652	13,741	12,682	0	0	14,775	1,430
20 University of Arizona	16,176	22,397	22,612	17,572	1,404	3,997	0	10,775
Total, 1st 20 insts.	589,950	571,289	548,540	500,942	72,265	159,858	285,541	72,286
21 Pennsylvania State Univ	15,536	14,095	12,537	10,544	5,636	7,367	0	2,533
22 Univ of New Hampshire	15,375	14,167	11,405	6,847	7,114	1,129	722	6,410
23 Desert Research Institute	14,043	14,118	13,671	13,023	2,589	6,145	0	5,309
24 Univ of Cal Los Angeles	13,813	12,215	11,272	11,278	2,756	11,057	0	0
25 College of William & Mary	12,784	12,794	11,906	4,770	0	21	12,763	0
26 Mass Inst of Technology	12,580	12,247	11,614	11,716	252	10,441	1,887	0
27 University of Minnesota	12,053	8,802	7,198	5,803	1,501	10,552	0	0
28 Utah State University	11,813	10,843	11,246	8,650	6,988	4,825	0	0
29 SUNY at Stony Brook	11,140	9,874	10,021	9,018	984	2,303	7,853	0
30 University of Oklahoma	11,009	9,056	8,632	8,581	4,053	6,956	0	0
Total, 1st 30 insts.	720,096	689,500	658,042	591,172	104,138	220,654	308,766	86,538
31 Univ of Cal Santa Barbara	10,014	9,611	9,305	8,687	0	2,199	7,652	163
32 Univ. Of Tennessee System	9,817	8,312	6,724	5,062	98	1,491	0	8,228
33 Univ of South Carolina	9,786	9,617	7,972	6,307	0	7,380	2,406	0
34 Colorado State University	9,520	8,207	7,813	7,223	9,375	145	0	0
35 Univ of MD College Park	8,232	6,437	6,557	5,862	5,765	512	1,955	0
36 Rutgers the St Univ of NJ	7,909	5,949	5,439	5,637	327	326	1,139	6,117
37 Univ of Southern Cal	7,798	7,207	7,305	6,462	0	3,544	2,690	1,564
38 University of Connecticut	7,621	6,796	6,569	4,574	0	278	7,343	0
39 SUNY at Albany	7,556	8,881	11,089	8,008	7,185	371	0	0
40 Harvard University	7,499	6,303	6,692	6,073	0	7,499	0	0
Total, 1st 40 insts.	805,848	766,820	733,507	655,047	126,888	244,399	331,951	102,610
41 Florida State University	7,452	7,996	6,912	6,844	3,466	737	2,468	781
42 Univ of Central Florida	7,307	7,084	8,739	2,204	7,098	209	0	0
43 Princeton University	6,974	6,270	6,388	6,210	2,558	4,416	0	0
44 Univ of NC at Chapel Hill	6,937	5,192	4,700	4,343	0	4,317	2,620	0
45 Univ of Massachusetts	6,908	5,979	6,062	5,715	0	3,738	67	3,103
46 Univ of Cal Santa Cruz	6,836	4,694	3,796	4,685	0	2,674	3,959	203
47 University of Kansas	6,759	6,196	7,324	6,954	0	6,750	0	9
48 University of Georgia	6,625	6,737	6,111	5,417	0	3,464	3,161	0
49 N C State Univ at Raleigh	6,584	5,301	5,473	4,740	0	0	2,790	3,794
50 University of Delaware	6,563	6,721	6,641	7,027	0	477	6,086	0
Total, 1st 50 insts.	874,793	828,990	795,653	709,186	140,010	271,181	353,102	110,500

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-54. R&D expenditures in the environmental sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Environmental sciences total				1991 subfields			
	1991	1990	1989	1988	Atmos-pheric	Earth sciences	Ocean-ography	Other
51 Cornell University	6,496	6,215	5,504	6,964	0	3,543	0	2,953
52 Univ of South Florida	6,305	5,063	3,955	2,755	0	583	5,722	0
53 VA Polytech Inst & St U	6,294	3,434	3,497	2,488	0	4,707	0	1,587
54 Univ of Nebraska-Lincoln	5,657	2,996	2,314	4,170	1,747	3,910	0	0
55 N J Inst of Technology	5,548	4,922	2,516	0	0	0	0	5,548
56 Georgia Institute of Tech	5,519	10,257	9,918	7,405	975	3,477	0	1,067
57 Univ of Nevada, Las Vegas	5,387	4,525 i	3,270 i	2,409	0	363	0	5,024
58 Arizona State University	5,376	7,529	4,399	4,477	0	5,213	0	163
59 West Virginia University	5,273	6,314	1,378	940	0	1,188	0	4,085
60 University of Florida	5,270	4,526	3,944	3,582	0	1,678	2,838	754
Total, 1st 60 insts.	931,918	884,771	836,348	744,376	142,732	295,843	361,662	131,681
61 Ohio State University	5,266	3,685	4,491	4,099	0	1,396	0	3,870
62 Brown University	5,241	4,669	4,138	4,118	0	5,201	0	40
63 Univ of Maine Orono	5,107	4,350	3,330	1,630	0	3,585	1,522	0
64 University of Chicago	4,948	4,089	3,994	3,057	0	4,948	0	0
65 University of Virginia	4,827	5,322	4,588	4,175	3,250	0	1,571	6
66 San Jose State University	4,433	3,805	3,698	2,247	979	313	3,141	0
67 Univ of Nevada - Reno	4,132	4,424	3,738	4,170	27	1,649	15	2,441
68 Southern Methodist Univ	3,991	7,011 i	4,051	2,018	0	3,991	0	0
69 N Mex Inst Mining & Tech	3,663 i	4,576	4,114	3,206	1,857 i	1,806 i	0 i	0 i
70 University of Utah	3,659	3,521	3,477	3,290	1,234	2,425	0	0
Total, 1st 70 insts.	977,185	930,223	875,967	776,386	150,079	321,157	367,911	138,038
71 Univ of Cal Berkeley	3,619	5,389	3,024	2,374	0	3,549	0	70
72 Tufts University	3,565	4,148	3,922	2,941	0	25	0	3,540
73 University of Wyoming	3,460	3,046	2,704	2,842	1,409	1,452	0	599
74 US Naval Postgrad School	3,426	3,558	3,029	3,865	1,617	0	1,809	0
75 New Mexico State Univ	3,069	2,108 i	1,788	1,939	2,356	455	42	216
76 Memphis State University	3,047	2,946	2,679	2,313	0	3,047	0	0
77 Duke University	2,797	2,520	3,316	3,732	0	521	2,276	0
78 University of Oregon	2,758	2,655	2,510	950	0	813	1,945	0
79 Univ of Wis-Milwaukee	2,741	2,740	2,457	2,266	0	182	2,548	11
80 Rice University	2,685	2,849	2,175	2,257	0	1,030	0	1,655
Total, 1st 80 insts.	1,008,352	962,182	903,571	801,865	155,461	332,231	376,531	144,129
81 University of N Dakota	2,674	2,882	2,923	2,679	2,554	51	0	69
82 Oregon Grad Inst Sci/Tech	2,598	2,165	2,289	2,209	1,041	0	0	1,557
83 Stanford University	2,496	2,804	5,186	4,464	0	1,525	971	0
84 Yale University	2,359	2,329	2,153	2,241	899	855	381	224
85 Purdue University	2,202	1,882	2,020	1,804	451 i	885 i	626 i	240 i
86 Carnegie-Mellon Univ	2,127	1,886	1,676	1,701	0	0	0	2,127
87 The University of Alabama	1,992	2,244	2,291	940	0	745	26	1,219
88 Washington University	1,987	1,999	1,966	1,783	0	1,987	0	0
89 University of Idaho	1,961	2,006	1,436	1,230	0	1,379	0	582
90 Clark Atlanta University	1,922	961 i	0e	--	0	0	0	1,922
Total, 1st 90 insts.	1,030,670	983,340	925,511	820,916	160,406	339,658	378,537	152,069
91 SUNY Col of Env Sci & For	1,864	2,177	2,234	1,103	620	262	436	546
92 Michigan State University	1,842 i	1,758	1,159	1,017	0 i	178 i	0 i	1,664 i
93 Univ of Wis-Superior	1,702	1,692	1,745	1,552	0	0	0	1,702
94 Univ of North Texas	1,674	1,425	1,191	1,564	0	0	0	1,674
95 University of New Mexico	1,665	1,628	1,521	1,568	766	899	0	0
96 Old Dominion U Res Fdn	1,642	1,536	1,229	1,088	0	53	1,589	0
97 S Dak Sch Mines & Tech	1,620	1,504	1,573	1,286	1,620	0	0	0
98 Oklahoma State University	1,563	1,469	1,003	427	0	1,108	0	455
99 Wentworth Inst of Tech	1,460	1,435	1,383	1,457	1,460	0	0	0
100 Univ of P R-Mayaguez	1,459 i	1,424	1,167	1,723	0 i	934 i	525 i	0 i
Total, 1st 100 insts.	1,047,161	999,388	939,716	833,701	164,872	343,092	381,087	158,110
Total, all other sampled insts.	50,257	52,803	51,181	55,374	4,566	30,715	6,259	8,717
Estimated total non-sampled insts.	22,486	20,609	18,571	0	7,008	6,227	9,057	194

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-55. Federally financed R&D expenditures in the environmental sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Environmental sciences total				1991 subfields			
	1991	1990	1989	1988	Atmos-pheric	Earth sciences	Ocean-ography	Other
Total, all institutions	704,410	685,807	657,506	585,977	132,217	215,983	267,903	88,307
1 Woods Hole Ocngrphic Inst	58,693i	52,642	57,043	40,800	3,858i	19,853i	14,402i	18,580i
2 Univ of Cal San Diego	47,954	53,102	57,182	53,001	0	10,490	37,464	0
3 Texas A & M University	47,120	45,980	42,308	41,651	570	837	41,523	4,190
4 Johns Hopkins Univ	36,233	37,661	40,712	29,278	9,324	2,519	15,532	8,858
5 Columbia Univ Main Div	29,006	23,965	28,204	27,073	0	0	29,006	0
6 University of Washington	21,133	20,274	17,954	19,195	6,429	4,425	10,195	84
7 Univ. of Colorado	20,470	20,252	18,997	19,362	10,882	7,209	575	1,804
8 Univ of Alaska Fairbanks	19,382	14,079	11,390	10,015e	713	8,339	10,288	42
9 Oregon State University	17,962	16,568	16,577	15,640	836	802	16,324	0
10 University of Miami	16,288	14,981	13,691	11,194	7,820	9	5,698	2,761
Total, 1st 10 insts.	312,241	299,504	304,058	267,209	40,432	54,483	181,007	36,319
11 California Inst of Tech	15,811	15,155	13,628	11,459	0	15,789	0	22
12 Univ of Hawaii-Manoa	15,095	15,393	14,673	13,657	32	13,318	1,538	207
13 Univ of Rhode Island	14,209	14,239	10,829i	11,334	1,270	96	12,843	0
14 Univ of Wis-Madison	14,109	15,865	14,461	14,852	10,965	855	664	1,625
15 University of Michigan	12,631	13,150	11,965	11,870	8,377	2,172	641	1,441
16 Univ of New Hampshire	11,745	9,198	7,631	4,315	6,214	811	407	4,313
17 Univ of Texas at Austin	10,558	6,644	5,137	8,284	0	8,117	2,441	0
18 Mass Inst of Technology	10,160	9,776	9,032	9,583	203	8,433	1,524	0
19 Univ of Cal Los Angeles	9,763	8,654	7,753	7,779	2,555	7,208	0	0
20 Colorado State University	8,082	7,414	7,134	6,589	7,986	96	0	0
Total, 1st 20 insts.	434,404	414,992	406,301	366,931	78,034	111,378	201,065	43,927
21 Desert Research Institute	7,337	6,983	7,380	6,931	2,007	4,642	0	688
22 Pennsylvania State Univ	7,245	6,313	5,857	5,062	4,558	2,339	0	348
23 Univ of Cal Santa Barbara	7,036	7,029	6,604	5,621	0	1,633	5,393	10
24 SUNY at Stony Brook	6,816	6,018	5,081	6,172	857	1,532	4,427	0
25 Univ. Of Tennessee System	6,357	4,907	4,342	3,319	90	938	0	5,329
26 Univ of Southern Cal	6,294	5,196	5,326	4,747	0	3,140	2,148	1,006
27 Harvard University	6,273	5,815	6,202	6,019	0	6,273	0	0
28 Louisiana State Univ Sys	5,829	5,975	4,822	4,919	0	1,517	3,647	665
29 University of Ill Urbana	5,712	6,054	6,030	5,941	1,035	3,922	0	755
30 Utah State University	5,607	4,998	5,811	4,867	4,641	966	0	0
Total, 1st 30 insts.	498,910	474,280	463,756	420,529	91,222	138,280	216,680	52,728
31 Univ of MD College Park	5,064	4,593	5,061	4,503	3,614	229	1,221	0
32 University of Arizona	4,964	6,644	6,665	4,693	296	1,901	0	2,767
33 Arizona State University	4,922	7,073	4,017	3,399	0	4,922	0	0
34 University of Connecticut	4,762	4,341	4,366	2,604	0	231	4,531	0
35 Univ of Nevada, Las Vegas	4,731	4,048i	2,737i	2,054	0	263	0	4,468
36 Florida State University	4,652	4,183	3,877	3,960	2,446	351	1,282	573
37 Princeton University	4,404	3,930	3,454	3,289	1,919	2,485	0	0
38 University of Virginia	4,208	4,670	3,940	3,526	2,665	0	1,543	0
39 Brown University	4,204	3,961	3,499	3,858	0	4,204	0	0
40 University of Delaware	4,185	3,786	3,666	3,505	0	275	3,910	0
Total, 1st 40 insts.	545,006	521,509	505,038	455,920	102,162	153,141	229,167	60,536
41 Univ of Cal Santa Cruz	4,089	2,725	2,270	2,846	0	1,602	2,407	80
42 Southern Methodist Univ	3,886	6,896i	3,913	1,935	0	3,886	0	0
43 Cornell University	3,824	3,161	3,120	4,935	0	2,980	0	844
44 College of William & Mary	3,788	3,346	2,601	2,472	0	14	3,774	0
45 West Virginia University	3,713	5,106	554	366	0	666	0	3,047
46 Univ of Maine Orono	3,606	2,806	2,236	1,061	0	2,211	1,395	0
47 VA Polytech Inst & St U	3,487	1,580	1,694	816	0	1,900	0	1,587
48 Ohio State University	3,481	1,993	2,465	2,195	0	754	0	2,727
49 US Naval Postgrad School	3,423	3,543	2,961	3,862	1,614	0	1,809	0
50 Tufts University	3,397	3,737	2,937	2,049	0	21	0	3,376
Total, 1st 50 insts.	581,700	556,402	529,809	478,457	103,776	167,175	238,552	72,197

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-55. Federally financed R&D expenditures in the environmental sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Environmental sciences total				1991 subfields			
	1991	1990	1989	1988	Atmos-pheric	Earth sciences	Ocean-ography	Other
51 N C State Univ at Raleigh	3,276	2,625	2,257	2,426	0	0	1,048	2,228
52 University of Chicago	3,249	3,728	3,765	2,817	0	3,249	0	0
53 Georgia Institute of Tech	3,169	5,784	5,568	4,188	560	1,997	0	612
54 SUNY at Albany	3,136	4,953	5,282	5,145	2,853	283	0	0
55 Univ of NC at Chapel Hill	3,123	2,614	2,666	2,412	0	1,949	1,174	0
56 Univ of South Carolina	2,962	2,827	2,612	2,342	0	1,675	1,287	0
57 Univ of South Florida	2,961	2,785	3,080	1,983	0	62	2,899	0
58 U of MD Center For EES	2,857	2,379	2,519	2,542	0	0	2,684	173
59 San Jose State University	2,711	2,936	3,116	1,998	702	47	1,962	0
60 University of Minnesota	2,568	2,440	2,790	2,708	0	2,568	0	0
Total, 1st 60 insts.	611,712	589,473	563,464	507,018	107,891	179,005	249,606	75,210
61 University of Oklahoma	2,427	2,399	2,494	2,281	1,567	860	0	0
62 Univ of Cal Berkeley	2,334	3,954	2,011	1,432	0	2,328	0	6
63 University of Oregon	2,209	2,206	2,048	550	0	499	1,710	0
64 New Mexico State Univ	2,200	1,797i	1,501	1,500	1,883	287	0	30
65 University of Utah	2,154	1,978	2,238	2,166	1,080	1,074	0	0
66 University of N Dakota	2,153	2,704	2,874	2,257	2,076	46	0	31
67 Univ of Nevada - Reno	2,044	2,467	1,800	2,500	27	1,246	15	756
68 Stanford University	2,009	2,236	3,218	3,032	0	1,176	833	0
69 N Mex Inst Mining & Tech	1,979i	1,940	1,897	788	1,325i	654i	0i	0i
70 University of Florida	1,915	1,940	1,820	1,827	0	560	1,182	173
Total, 1st 70 insts.	633,136	613,094	585,365	525,351	115,849	187,735	253,346	76,206
71 Duke University	1,883	1,817	2,112	1,909	0	391	1,492	0
72 University of Wyoming	1,798	1,825	2,055	2,025	981	640	0	177
73 Univ of Nebraska-Lincoln	1,771	679	1,469	2,386	871	900	0	0
74 Univ of Massachusetts	1,768	1,200	1,396	1,199	0	1,437	63	268
75 Rice University	1,683	2,274	1,808	1,950	0	773	0	910
76 University of Georgia	1,652	1,826	1,574	1,437	0	623	1,029	0
77 Yale University	1,648	1,754	1,482	1,643	659	626	214	149
78 Purdue University	1,546	1,331	1,558	1,288	386i	584i	466i	110i
79 Wentworth Inst of Tech	1,460	1,435	1,383	1,457	1,460	0	0	0
80 Univ of Wis-Superior	1,402	1,550	1,495	1,309	0	0	0	1,402
Total, 1st 80 insts.	649,747	628,785	601,697	541,954	120,206	193,709	256,610	79,222
81 Washington University	1,390	1,414	1,470	1,379	0	1,390	0	0
82 S Dak Sch Mines & Tech	1,375	1,274	1,367	1,068	1,375	0	0	0
83 N J Inst of Technology	1,295	1,241e	0	0	0	0	0	1,295
84 Univ of P R-Mayaguez	1,275i	1,251	1,067	1,075	0i	808i	467i	0i
85 Old Dominion U Res Fdn	1,267	1,173	874	650	0	34	1,233	0
86 Oregon Grad Inst Sci/Tech	1,251	1,406	1,595	1,740	619	0	0	632
87 Clark Atlanta University	1,073	536i	0e	--	0	0	0	1,073
88 Nova University	1,069	1,035	878	746	0	0	1,069	0
89 Univ of Wis-Milwaukee	1,054	1,155	1,047	836	0	37	1,014	3
90 Rutgers the St Univ of NJ	945	710	804	1,000	19	162	157	607
Total, 1st 90 insts.	661,741	639,960	610,799	550,448	122,219	196,140	260,550	82,832
91 University of New Mexico	937	802	788	871	440	497	0	0
92 Michigan State University	783i	740	315	179	0i	108i	0i	675i
93 Univ of Cal Riverside	758	892	981	965	0	758	0	0
94 Univ of Cal Davis	732	996	626	677	0	732	0	0
95 Northern Arizona Univ	709	163	198	173	5	704	0	0
96 Mississippi State Univ	699	575	501	278	0	165	0	534
97 Memphis State University	688	622	504	446	0	688	0	0
98 Syracuse University	656	609	136	260	0	433	0	223
99 Univ of Central Florida	653	791	4,225	873	653	0	0	0
100 St Louis University	646	704	578	442	0	646	0	0
Total, 1st 100 insts.	669,002	646,874	619,651	555,612	123,317	200,871	260,550	84,264
Total, all other sampled insts.	21,726	24,380	23,465	30,365	2,712	13,142	1,840	4,032
Estimated total non-sampled insts.	13,682	14,553	14,390	0	6,188	1,970	5,513	11

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-56. Total and federally financed R&D expenditures in the mathematical sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	229,495	220,353	213,622	198,551	169,147	158,667	155,841	149,436
1 Johns Hopkins Univ	29,877	33,545	35,960	35,951	29,800	33,475	35,870	35,841
2 Rutgers the St Univ of NJ	8,993	8,479	6,114	6,012	5,182	4,658	2,345	2,926
3 University of Washington	6,383	6,247	5,436	4,122	5,910	5,772	4,902	3,750
4 Cornell University	5,903	5,819	5,194	5,436	4,509	4,557	3,930	4,312
5 George Washington Univ	5,898	5,552	5,260	4,109	5,590	5,161	5,064	3,985e
6 University of Minnesota	5,731	4,719	4,704	4,329	4,525	3,969	4,013	3,768
7 Boston College	5,188	3,649	2,500	2,062	4,497	3,065	2,372	2,056
8 Univ of Cal Berkeley	4,804	3,983	3,911	3,643	4,568	3,612	3,337	3,169
9 Iowa St U of Sci & Tech	4,547	4,082	4,184	3,671	1,594	1,465	1,631	1,374
10 Princeton University	4,344	2,768	3,320	2,674	3,556	1,976	2,196	1,996
Total, 1st 10 insts.	81,668	78,843	76,583	72,009	69,731	67,710	65,660	63,177
11 N C State Univ at Raleigh	3,956	3,203	3,091	2,608	1,305	1,258	1,208	1,022
12 Univ of Cal Los Angeles	3,732	3,456	3,009	2,655	3,568	3,323	2,899	2,504
13 Univ of Wis-Madison	3,683	3,905	3,619	4,188	2,446	2,668	2,390	2,777
14 Brown University	3,617	4,260	5,455	5,441	2,820	3,823	4,720	5,041
15 New York University	3,528	4,065	4,824	6,701	3,239	3,655	4,422	6,219
16 University of Michigan	3,192	2,454	1,646	1,590	1,976	1,745	1,392	1,488
17 Stanford University	2,942	3,001	2,900	2,855	2,488	2,672	2,602	2,598
18 Univ of MD College Park	2,569	8,936	7,956	7,253	1,611	1,716	1,562	1,263
19 SUNY at Stony Brook	2,566	2,166	1,513	1,350	1,743	1,425	1,014	988
20 Purdue University	2,544	2,353	1,967	1,793	1,868	1,820	1,695	1,314
Total, 1st 20 insts.	113,997	116,642	112,563	108,443	92,795	91,815	89,564	88,391
21 UT MD Anderson Cancer Ctr	2,483	2,358	2,265	1,990	1,012	1,047	1,019	831
22 Pennsylvania State Univ	2,462	2,104	1,725	1,181	1,649	1,372	1,118	930
23 University of Ill Urbana	2,422	2,227	2,242	1,872	1,651	1,378	1,490	1,317
24 Harvard University	2,398	2,060	2,174	1,362	2,262	2,049	1,773	1,362
25 Mass Inst of Technology	2,346	2,354	2,300	2,194	2,150	2,245	2,215	2,126
26 University of Arizona	2,259	1,762	1,850	1,839	1,764	1,386	1,509	1,563
27 Georgia Institute of Tech	2,244	1,365	1,046	656	1,288	769	587	392
28 University of Georgia	2,163	2,170	1,729	1,472	247	277	355	389
29 Ohio State University	2,114	1,665	1,393	1,113	1,515	1,346	1,169	872
30 Louisiana State Univ Sys	2,081	1,315	2,562	2,723	475	289	224	195
Total, 1st 30 insts.	136,969	136,022	131,849	124,845	106,808	103,973	101,023	98,368
31 University of Chicago	1,990	1,913	1,912	1,742	1,652	1,541	1,486	1,479
32 Univ of Ill Chicago	1,959	1,904	1,657	1,453	1,366	1,370	1,229	1,130
33 Yale University	1,926	1,421	1,279	1,152	1,785	1,279	1,138	1,067
34 University of Florida	1,892	1,948	1,994	1,604	1,405	1,216	1,427	1,232
35 VA Polytech Inst & St U	1,884	2,406	2,374	1,738	906	1,176	1,371	994
36 Carnegie-Mellon Univ	1,822	1,766	1,922	1,709	1,560	1,499	1,671	1,617
37 Clemson University	1,729	1,674	1,850	1,747	449	431	592	664
38 Univ of Cal San Diego	1,631	1,541	1,553	1,505	1,509	1,478	1,525	1,448
39 Univ of NC at Chapel Hill	1,600	1,328	1,492	1,372	1,424	1,233	1,462	1,290
40 University of Oklahoma	1,582	857	586	773	434	232	205	263
Total, 1st 40 insts.	154,984	152,780	148,468	139,640	119,298	115,428	113,129	109,552
41 Rice University	1,508	1,349	1,192	1,191	1,482	1,309	1,155	1,191
42 University of Virginia	1,506	1,173	1,216	960	1,243	959	964	797
43 Univ Alabama Huntsville	1,456	1,576	1,472	804	1,002	1,009	934	709
44 Univ of Southern Cal	1,444	1,214	1,054	1,051	1,393	828	841	708
45 Univ of Massachusetts	1,332	1,271	1,505	1,224	1,057	1,083	1,352	1,175
46 Boston University	1,331	646	528	778	1,331	537	433	633
47 Rensselaer Polytech Inst	1,256	1,473	1,523	1,291	586	717	751	648
48 Indiana University	1,255	1,102	1,236	1,256	698	812	751	661
49 Texas A & M University	1,252	1,400	1,187	859	1,140	1,156	1,041	788
50 Univ. of Colorado	1,198	1,188	1,017	1,042	1,110	1,132	990	995
Total, 1st 50 insts.	168,522	165,172	160,398	150,096	130,340	124,970	122,341	117,857

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-56. Total and federally financed R&D expenditures in the mathematical sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 University of Utah	1,191	1,161	1,070	1,015	1,064	967	847	917
52 Univ of Texas at Austin	1,185	890	947	708	789	645	651	513
53 Florida State University	1,161	2,306	2,494	2,337	619	722	638	671
54 Arizona State University	1,135	728	569	239	580	461	433	213
55 University of Dayton	1,107	692	259	310	1,082	637	216	257
56 Washington University	1,090	947	972	1,046	991	881	832	944
57 Oregon State University	1,064	847	676	648	731	448	469	415
58 Univ of Ark Fayetteville	1,008	893	750	632	178	213	138	84
59 Columbia Univ Main Div	970	1,043	1,164	1,125	941	1,042	1,127	1,100
60 California Inst of Tech	926	849	623	484	915	836	604	467
Total, 1st 60 insts.	179,359	175,528	169,922	158,640	138,230	131,822	128,296	123,438
61 Univ of Pennsylvania	900	1,013	750	699	811	892	741	699
62 Univ of Cal Santa Barbara	882	905	1,232	1,285	455	682	937	894
63 University of Iowa	882	782	833	905	609	402	538	645
64 CUNY Grad Sch & Univ Ctr	862	1,046	427	441	861	1,035	132	249
65 Northwestern University	855	973	736	590	642	766	655	546
66 Colorado School of Mines	845	724	802	633	503	518	503	286
67 Univ. Of Tennessee System	829	666	820	1,422	349	333	472	738
68 University of Pittsburgh	817	797	858	1,472	727	582	685	1,307
69 Univ of South Carolina	813	979	577	497	607	494	371	298
70 The University of Alabama	787	761	571	452	39	60	32	34
Total, 1st 70 insts.	187,831	184,174	177,528	167,036	143,833	137,586	133,362	129,134
71 Dartmouth College	749	459e	367	220	541	267i	242	189
72 Drexel University	742	673	535	490	90	108	78	38
73 University of Connecticut	702	788	711	498	477	397	394	282
74 U of Houston	677	908	835	697	419	478	486	525
75 Univ of Cal Riverside	664	654	682	659	349	324	347	365
76 Union College (NY)	662	622	562	567	46i	96i	49i	23i
77 Duke University	636	597	524	404	530	502	454	399
78 Univ of Cal Davis	621	499	713	694	472	426	571	517
79 US Naval Postgrad School	609	401	722	672	577	401	722	672
80 Brandeis University	580	591	555	442	526	535	487	375
Total, 1st 80 insts.	194,473	190,366	183,734	172,379	147,860	141,120	137,192	132,519
81 CUNY Bernard Baruch Col	576	187	121	47	94	36	99	42
82 University of Delaware	573	548	546	645	445	415	433	457
83 U of MD Baltimore County	565	523	423	269	565	519	406	267
84 Kent State University	559	498	637	212	316	396	408	132
85 Wesleyan University	546i	648i	584	232	95i	127i	144	149
86 Univ Alabama Birmingham	531	587	449	299	117	164	118	193
87 SUNY at Buffalo	529	364	336	327	287	249	216	215
88 Univ of Southwestern LA	529	426	435	338	9	30	75	25
89 University of Akron	528	347	347	154	287	254	176	103
90 Oklahoma State University	523	466	327	605	189	219	192	169
Total, 1st 90 insts.	199,932	194,960	187,939	175,507	150,264	143,529	139,459	134,271
91 Washington State Univ	520	504	486	428	295	339	367	403
92 San Diego State Univ	511	280	520	567	369	98	329	358
93 Michigan State University	504i	478	760	895	396i	374	585	694
94 Colorado State University	503	626	409	330	336	448	312	229
95 Kans St U - Ag & App Sci	476	512	438	404	71	169	109	107
96 Oakland University	475	387i	333	63	0	0i	0	0
97 Univ of North Texas	450	329	282	187	179	83	98	133
98 Clarkson University	436	416	456	616	393	373	425	577
99 Loyola Univ - Chicago	431	101	65	42	431	55	54	22
100 Hampton University	415	159	133	--	415	159	133	--
Total, 1st 100 insts.	204,653	198,752	191,821	179,039	153,149	145,627	141,871	136,794
Total, all other sampled insts.	19,894	18,566	19,154	19,512	13,421	11,759	12,540	12,642
Estimated total non-sampled insts.	4,948	3,035	2,647	0	2,577	1,281	1,430	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-57. Total and federally financed R&D expenditures in the computer sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	544,464	509,216	472,181	408,607	366,009	339,961	322,440	289,196
1 Johns Hopkins Univ	57,525	63,497	68,832	54,337	57,397	63,383	68,748	54,206
2 Carnegie-Mellon Univ	45,090	44,808	45,946	39,261	33,342	33,951	32,412	29,765
3 Univ of Southern Cal	32,816	30,718	32,092	27,896	30,476	27,705	28,850	25,771
4 University of Minnesota	25,186	11,721	1,965	1,363	22,705	8,584	989	858
5 Cornell University	21,291	21,327	16,325	14,102	17,450	17,457	12,433	11,044
6 University of Ill Urbana	18,087	17,457	14,721	14,668	8,836	9,184	7,291	6,786
7 Georgia Institute of Tech	17,077	15,295	17,522	13,325	9,805	8,624	9,836	7,195
8 Univ of Texas at Austin	14,460	9,653	10,479	10,322	5,172	1,852	3,456	3,588
9 Mass Inst of Technology	13,617	12,343	11,303	10,295	9,167	8,858	8,447	7,914
10 Univ of Nevada, Las Vegas	11,141	7,134i	4,826i	817	11,133	7,131i	4,822i	817
Total, 1st 10 insts.	256,270	233,953	224,011	186,386	205,483	186,729	177,284	147,944
11 University of Michigan	10,453	7,688	6,491	1,459	6,347	2,941	3,395	741
12 West Virginia University	9,829	10,211	4,544	673	128	359	413	421
13 Syracuse University	9,379	10,351	8,776	12,956	2,299	5,211	4,287	9,730
14 Iowa St U of Sci & Tech	9,245	4,232	4,419	4,865	5,076	80	40	0
15 Stanford University	8,975	10,582	12,752	13,665	7,278	9,247	11,397	12,186
16 Rice University	8,753	5,369	3,030	1,799	7,222	5,046	2,511	1,381
17 New Mexico State Univ	8,357	9,658i	8,154	12,684	6,388	8,590i	7,172	9,705
18 Univ of Cal San Diego	8,170	7,202	5,521	5,560	3,693	2,985	2,483	2,880
19 Univ of Massachusetts	7,588	8,504	8,213	7,913	5,133	6,508	6,373e	6,527
20 Univ of NC at Chapel Hill	7,569	6,636	6,563	5,312	4,492	4,187	4,040	3,276
Total, 1st 20 insts.	344,588	314,386	292,474	253,272	253,539	231,883	219,395	194,791
21 New York University	7,029	6,903	8,179	7,136	6,092	6,286	7,049	5,875
22 Univ of Pennsylvania	6,904	7,970	7,415	6,836	6,139	6,114	5,163	4,193
23 Univ of MD College Park	6,569	9,240	8,054	7,339	3,423	2,875	2,212	2,310
24 Univ. Of Tennessee System	6,130	2,655	1,523	1,253	4,037	1,427	1,194	915
25 Texas A & M University	5,047	4,075	2,805	2,384	1,440	1,787	1,379	297
26 Washington University	4,833	4,361	3,355	4,036	2,385	2,591	2,481	3,291
27 California Inst of Tech	4,793	3,347	3,458	2,966	4,091	2,542	2,428	1,921
28 Clemson University	4,691	5,018	4,003	1,530	696	661	1,583	951
29 Univ of Wis-Madison	4,454	3,966	4,912	2,616	3,146	2,979	4,034	1,684
30 Rutgers the St Univ of NJ	4,298	4,310	3,164	3,256	1,704	1,731	1,522	1,672
Total, 1st 30 insts.	399,336	366,231	339,342	292,624	286,692	260,876	248,440	217,900
31 SUNY at Buffalo	4,199	3,128	2,272	1,901	3,238	1,986	1,231	1,290
32 Univ. of Colorado	4,027	3,010	2,935	2,289	2,692	2,282	1,823	1,787
33 Columbia Univ Main Div	3,936	3,419	3,882	3,125	3,108	2,523	2,742	2,241
34 University of Georgia	3,908	3,383	3,480	3,444	2,035	1,802	2,154	2,071
35 Univ of Cal Irvine	3,820	3,863	2,882	2,750	2,814	3,140	2,303	2,055
36 Princeton University	3,759	4,293	4,016	4,634	2,371	2,842	3,165	3,145
37 Brown University	3,686	5,029	4,592	4,096	1,600	2,316	1,950	1,549
38 Univ of Cal Los Angeles	3,608	3,938	3,622	4,120	2,273	2,618	1,989	2,395
39 University of Utah	3,500	2,896	2,920	2,458	2,386	1,804	2,148	1,976
40 Yale University	3,402	5,899	8,065	9,928	2,937	5,045	7,110	8,997
Total, 1st 40 insts.	437,181	405,089	378,008	331,369	312,146	287,234	275,055	245,408
41 Northwestern University	3,374	2,043	709	769	1,604	636	339	346
42 Purdue University	3,353	3,033	3,177	3,875	2,569	2,375	2,611	3,455
43 University of Arizona	2,919	2,496	2,491	2,038	1,740	1,724	1,857	1,617
44 Univ of Southwestern LA	2,873	2,507	2,435	284	399	255	132	139
45 Univ Alabama Huntsville	2,789	2,736	2,926	1,233	1,805	1,558	1,837	793
46 University of Virginia	2,769	2,729	2,756	2,400	2,027	2,132	2,198	1,982
47 Univ of Cal Santa Barbara	2,558	1,591	1,128	1,342	1,974	1,206	837	879
48 University of Florida	2,387	2,533	1,406	625	1,275	1,207	419	414
49 Howard University	2,369	39i	38i	37i	2,030	32i	30i	28i
50 University of Washington	2,250	2,936	2,820	2,293	2,082	2,777	2,601	2,040
Total, 1st 50 insts.	464,822	427,734	397,896	346,265	329,651	301,136	288,116	257,101

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-57. Total and federally financed R&D expenditures in the computer sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 University of Oklahoma	2,240	1,587	926	475	598	522	276	108
52 Southern Ill U-Carbondale	2,214	1,977	2,444	1,714	30	0	0	0
53 Oregon Grad Inst Sci/Tech	1,888	1,672	1,645	921	1,478	1,577	1,471	633
54 N C State Univ at Raleigh	1,858	1,570	1,423	715	922	825	790	672
55 Duke University	1,760	2,099	1,697	1,768	1,264	1,786	1,509	1,379
56 University of Connecticut	1,705	1,632	1,386	1,210	116	148	196	286
57 Univ of Cal Berkeley	1,651	1,331	511	685	491	287	137	122
58 Rensselaer Polytech Inst	1,593	2,185	1,515	1,715	743	1,063	747	861
59 SUNY at Stony Brook	1,570	1,501	1,699	1,613	1,045	1,137	1,322	1,185
60 University of Rochester	1,521	1,897	2,630	2,397	1,402	1,725	2,096	2,216
Total, 1st 60 insts.	482,822	445,185	413,772	359,478	337,740	310,206	296,660	264,563
61 San Diego State Univ	1,449	1,396	1,291	1,180	893	1,004	1,123	1,130
62 University of Delaware	1,448	1,340	1,387	530	1,129	1,033	1,154	269
63 US Naval Postgrad School	1,421	1,243	1,732	1,818	1,421	1,234	1,713	1,818
64 Pennsylvania State Univ	1,408	1,449	1,135	811	734	837	685	524
65 Univ of North Texas	1,404	537	341	217	56	16	43	0
66 New York Inst Technology	1,396i	1,486	2,239i	3,162i	0i	0	0i	181i
67 Harvard University	1,355	1,849	1,222	1,078	1,071	1,532	1,108	1,078
68 Ohio State University	1,355	1,163	814	1,040	895	795	574	700
69 The University of Alabama	1,331	1,213	1,311	1,344	0	0	48	244
70 Northeastern University	1,318	824	562	310	758i	778	562	310
Total, 1st 70 insts.	496,707	457,685	425,806	370,968	344,697	317,435	303,670	270,817
71 Univ of Missouri Kan City	1,289	1,439	1,502	1,502	0	0	0	0
72 Indiana University	1,259	1,600	1,391	1,010	889	1,313	1,189	908
73 University of Iowa	1,222	963	1,153	1,012	32	101	175	60
74 Univ of Nebraska-Lincoln	1,177	1,140	964	753	506	388	359	267
75 Arizona State University	1,133	1,436	1,110	913	619	561	833	623
76 University of Pittsburgh	1,055	876	556	522	537	554	317	272
77 University of Chicago	985	1,009	631	442	941	970	611	349
78 Georgetown University	980	1,114	660	872	798	856	481	629
79 Wright State University	975	1,028	0	1	603	662	0	0
80 Oregon State University	937	858	537	573	347	289	168	190
Total, 1st 80 insts.	507,719	469,148	434,310	378,568	349,969	323,129	307,803	274,115
81 Wayne State University	851	209	450	322	40	16	91	61
82 Univ of Tex at Arlington	850	460	339	352	152	100	124	13
83 Southern U & A&M College	849	499	345	289	749	307	190	264
84 Univ of South Carolina	802	1,015	1,593	222	29	69	67	56
85 Florida Atlantic Univ	776	51	16	12	88	0	0	0
86 Old Dominion U Res Fdn	755	839	546	308	499	617	294	304
87 VA Polytech Inst & St U	736	1,032	824	1,048	297	342	226	121
88 Univ of Central Florida	724	671	436	112	497	388	236	33
89 Univ of Cal Santa Cruz	712	493	313	346	468	349	252	282
90 Air Force Inst of Tech/Nr	699	634	535i	434	699	634	535i	434
Total, 1st 90 insts.	515,473	475,051	439,707	382,013	353,487	325,951	309,818	275,683
91 University of Lowell	677	818	658	273	132	0	0	0
92 Auburn University	673	701	695	386	249	340	245	200
93 SUNY at Albany	650	630	452	363	371	462	319	263
94 Univ of Cal Davis	635	631	0	0	0	0	0	0
95 College of William & Mary	631	768	525	268	376	412	402	225
96 Inst Paper Sci and Tech	566	370	273i	267	19	0	0i	0
97 Oklahoma State University	534	592	702	135	108	104	170	0
98 Texas Tech University	527	546	350	80	8	0	20	20
99 Kent State University	520	917	0	13	465	917	0	13
100 University of Oregon	518	563	997	688	336	470	719	558
Total, 1st 100 insts.	521,404	481,587	444,359	384,486	355,551	328,656	311,693	276,962
Total, all other sampled insts.	18,727	23,428	23,854	24,121	8,775	9,908	9,027	12,234
Estimated total non-sampled insts.	4,333	4,201	3,968	0	1,683	1,397	1,720	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-58. R&D expenditures in the life sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Life sciences total				1991 subfields			
	1991	1990	1989	1988	Agri-cultural sciences	Bio-logical sciences	Medical sciences	Other
Total, all institutions	9,492,904	8,762,406	8,079,075	7,255,708	1,463,849	3,056,720	4,569,054	403,281
1 Univ of Cal San Francisco	268,700	238,278	219,446	193,289	0	0	268,700	0
2 Johns Hopkins Univ	222,541	208,607	180,099	156,663	0	59,710	127,022	35,809
3 University of Minnesota	222,512	204,590	187,347	173,579	50,863	40,172	103,342	28,135
4 University of Michigan	191,582	162,379	143,184	131,959	129	57,119	118,472	15,862
5 Univ of Wis-Madison	187,200	178,337	165,141	155,996	23,154	58,766	101,919	3,361
6 Univ of Cal Davis	178,466	177,754	162,623	138,273	92,896	29,382	56,092	96
7 University of Washington	172,710	152,755	136,184	112,899	12,074	56,042	82,930	21,664
8 Cornell University	171,008	166,595	163,640	149,475	43,900	39,340	79,189	8,579
9 Baylor Col of Medicine	161,084	155,122	134,681	106,814	0	77,138	83,946	0
10 Univ of Cal Los Angeles	157,174	157,626	144,933	125,396	7	17,422	136,264	3,481
Total, 1st 10 insts.	1,932,977	1,802,043	1,637,278	1,444,343	223,023	435,091	1,157,876	116,987
11 Yale University	153,527	143,093	132,778	122,179	1,209	55,776	96,542	0
12 Harvard University	144,264	136,522	127,771	117,371	30	72,417	71,817	0
13 Univ of Pennsylvania	143,981	132,599	117,746	111,821	0	32,800	111,181	0
14 Washington University	141,528	133,337	111,638	101,874	0	56,545	82,399	2,584
15 Stanford University	138,102	136,087	129,352	117,790	0	8,915	128,595	592
16 Duke University	133,314	111,309	102,646	90,984	2,180	32,910	96,758	1,466
17 Univ of Cal San Diego	129,711	111,314	99,224	89,775	0	12,013	117,698	0
18 Columbia Univ Main Div	119,235	113,392	100,063	92,481	0	49,278	69,554	403
19 University of Georgia	114,576	111,742	103,667	100,377	55,861	43,676	15,039	0
20 Texas A & M University	111,045	106,885	102,993	101,181	40,244	67,121	3,680	0
Total, 1st 20 insts.	3,262,260	3,038,323	2,765,156	2,490,176	322,547	866,542	1,951,139	122,032
21 Univ of NC at Chapel Hill	107,075	92,270	91,710	80,351	0	49,539	47,137	10,399
22 Univ Alabama Birmingham	106,472	104,185	94,157	80,302	0	33,194	72,103	1,175
23 Univ of Cal Berkeley	104,359	87,951	83,990	72,444	47,719	30,685	25,889	66
24 University of Pittsburgh	104,112	90,285	84,583	74,538	0	3,343	79,439	21,330
25 UT MD Anderson Cancer Ctr	102,322	84,819	80,032	70,305	0	44,461	57,861	0
26 Ohio State University	101,655	93,307	91,583	82,221	34,776	33,657	29,584	3,638
27 University of Arizona	97,583	82,443	75,080	68,694	28,353	29,334	36,765	3,131
28 UT SW Medical Ctr-Dallas	94,511	85,919	79,920	70,392	0	40,843	53,668	0
29 Univ of MD Balt Prof Sch	89,811	83,689	75,854	68,787	0	13,472	71,849	4,490
30 University of Rochester	89,004	85,078	80,283	75,446	0	30,422	53,386	5,196
Total, 1st 30 insts.	4,259,164	3,928,269	3,602,348	3,233,656	433,395	1,175,492	2,478,820	171,457
31 Univ of Southern Cal	87,695	83,856	82,906	79,493	0	3,983	82,874	838
32 New York University	87,436	84,854	76,883	73,643	0	30,958	41,624	14,854
33 Yeshiva University	86,721	83,968	74,486	75,371	0	22,547	45,096	19,078
34 University of Iowa	86,388	82,386	78,000	68,474	0	23,314	62,116	958
35 Pennsylvania State Univ	86,055	83,743	74,665	64,332	35,852	32,896	15,463	1,844
36 Louisiana State Univ Sys	83,973	83,104	73,805	69,364	38,406	28,932	15,908	727
37 University of Florida	83,456	81,616	73,051	63,488	23,958	23,319	31,984	4,195
38 Emory University	82,778	74,880	58,197	55,798	0	17,575	50,005	15,198
39 University of Chicago	79,961	79,769	74,047	66,881	0	30,192	49,519	250
40 Northwestern University	79,551	74,268	66,589	58,757	0	30,591	39,288	9,672
Total, 1st 40 insts.	5,103,178	4,740,713	4,334,977	3,909,757	531,611	1,419,799	2,912,697	239,071
41 Michigan State University	76,581i	73,035	73,509	70,977	46,285i	21,640i	7,976i	680i
42 Univ. of Colorado	76,518	75,398	72,885	64,560	0	27,564	45,200	3,754
43 University of Connecticut	74,000	72,266	69,134	56,117	8,249	27,182	37,813	756
44 Univ of Med & Dent of N J	73,449	64,229	54,451	42,027	0	23,684	49,765	0
45 N C State Univ at Raleigh	73,215	71,258	71,026	63,769	37,659	32,438	0	3,118
46 Univ of MD College Park	72,859	19,554	19,742	17,306	39,962	30,936	0	1,961
47 Univ of Missouri Columbia	72,022	66,038	57,910	52,744	31,425	22,635	17,618	344
48 Case Western Reserve Univ	71,887	60,411e	54,525	47,891	0	27,954	43,933	0
49 University of Miami	70,868	68,395	67,952	52,146	0	15,525	55,240	103
50 Purdue University	70,314	66,601	60,119	54,592	24,010	37,073	8,115	1,116
Total, 1st 50 insts.	5,834,891	5,377,898	4,936,230	4,431,886	719,201	1,686,430	3,178,357	250,903

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-58. R&D expenditures in the life sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Life sciences total				1991 subfields			
	1991	1990	1989	1988	Agri-cultural sciences	Bio-logical sciences	Medical sciences	Other
51 Univ of Massachusetts	69,401	54,677	66,542	50,167	8,360	26,016	30,146	4,879
52 SUNY at Buffalo	69,283	66,568	65,589	57,475	0	34,817	32,501	1,965
53 CUNY Mt Sinai Sch of Med	66,310	63,752	56,856	49,727	0	15,892	50,418	0
54 Rutgers the St Univ of NJ	64,588	59,183	54,452	46,470	21,252	31,332	8,446	3,558
55 Rockefeller University	64,552	62,718	63,371	58,086	0	61,707	2,845	0
56 Univ. Of Tennessee System	63,634	60,690	60,877	56,256	22,068	18,571	19,715	3,280
57 Indiana University	62,685	55,502	48,378	41,979	0	17,420	43,325	1,940
58 Iowa St U of Sci & Tech	62,329	65,403	56,107	46,918	25,216	25,977	5,698	5,438
59 Virginia Commonwlth Univ	61,605	58,528	49,466	40,761	0	20,700	39,516	1,389
60 University of Utah	60,708	55,460	49,974	46,648	0	20,691	37,118	2,899
Total, 1st 60 insts.	6,479,986	5,980,379	5,507,842	4,926,373	796,097	1,959,553	3,448,085	276,251
61 Univ of Nebraska-Lincoln	59,898	55,349	49,093	44,801	48,814	5,681	5,403	0
62 Vanderbilt University	59,736	57,246	48,996	45,549	0	30,340	28,872	524
63 Univ of Ill Chicago	59,217	59,462	58,061	50,315	0	19,809	39,371	37
64 University of Kentucky	58,612	51,789	49,192	52,811	29,971	1,073	25,025	2,543
65 Oregon State University	57,612	51,442	51,912	50,103	31,921	15,974	2,502	7,215
66 Tulane University	55,581	46,411	38,787	34,718	0	7,327	27,150	21,104
67 Univ of Cal Irvine	55,419	53,261	44,441	39,364	0	29,489	25,930	0
68 University of Cincinnati	54,707	51,495	48,512	42,142	0	31,538	23,169	0
69 Boston University	53,665	54,067	50,721	48,717	0	3,028	49,305	1,332
70 U Tex Hlth Sci Ctr Houstn	53,402	44,345	44,893	41,649	0	15,871	34,705	2,826
Total, 1st 70 insts.	7,047,835	6,505,246	5,992,450	5,376,542	906,803	2,119,683	3,709,517	311,832
71 VA Polytech Inst & St U	52,164	52,477	47,777	42,579	35,933	11,547	3,513	1,171
72 University of Ill Urbana	51,838	49,898	48,881	45,263	26,036	21,210	4,592	0
73 U Tex Hlth Sci Ctr S Anto	51,768	45,663	42,501	39,673	0	17,628	34,140	0
74 Washington State Univ	51,727	46,456	38,711	37,423	24,581	23,841	2,366	939
75 University of Virginia	50,807	51,023	42,708	40,904	0	20,757	29,919	131
76 Georgetown University	50,375	41,120	43,272	35,828	0	13,207	37,168	0
77 Univ of Cal Riverside	49,362	47,431	45,750	44,836	42,555	4,859	1,948	0
78 Wayne State University	49,221	43,871	40,433	32,995	0	915	44,086	4,220
79 Unif Serv Univ of Hlth Sc	47,096	36,080	27,062	15,991	0	5,590	41,506	0
80 SUNY at Stony Brook	46,642	40,081	38,408	40,172	0	25,296	18,363	2,983
Total, 1st 80 insts.	7,548,835	6,959,346	6,407,953	5,752,206	1,035,908	2,264,533	3,927,118	321,276
81 U Tex Med Brnch Galveston	45,086	40,610	38,717	33,047	0	13,393	20,511	11,182
82 Univ of South Florida	44,554	40,589	31,204	31,902	0	1,745	42,661	148
83 Wake Forest University	43,223	38,636	36,534	30,054	0	907	42,316	0
84 U of VT & State Agr Coll	42,285	41,009	37,781	33,199	4,681	16,393	19,389	1,822
85 Auburn University	40,774	40,638	33,627	34,236	27,875	7,743	3,140	2,016
86 Medical College of Wis	40,446	34,622	34,951	33,231	0	11,729	28,717	0
87 Oregon Hlth Sciences Univ	40,272i	40,070i	33,929	28,854	0i	10,758i	27,857i	1,657i
88 Kans St U - Ag & App Sci	39,863	37,289	35,441	32,178	31,691	7,274	898	0
89 Colorado State University	39,548	36,345	30,975	27,494	14,990	23,543	1,012	3
90 Temple University	38,985	37,121	34,089	30,135	29	23,858	15,021	77
Total, 1st 90 insts.	7,963,871	7,346,275	6,755,201	6,066,536	1,115,174	2,381,876	4,128,640	338,181
91 Tufts University	38,493	37,300	40,168	43,514	79	31,289	6,185	940
92 University of Kansas	37,315	32,597	29,894	27,132	0	22,331	12,433	2,551
93 SUNY Hlth Sci Ctr - Syrcs	37,294	35,193	31,125	24,541	0	11,943	25,351	0
94 Mississippi State Univ	36,510	36,357	35,502	31,618	33,339	2,514	657	0
95 Dartmouth College	35,637	33,439e	28,579	25,037	0	1,040	34,597	0
96 Clemson University	34,752	34,611	28,864	26,278	24,770	8,184	77	1,721
97 Oklahoma State University	34,743	32,289	29,247	26,868	23,712	9,349	1,653	29
98 Mass Inst of Technology	34,398	37,711	34,322	34,755	0	34,398	0	0
99 University of Oklahoma	33,357	27,424	24,853	23,088	0	11,273	20,205	1,879
100 Thomas Jefferson Univ	33,066	30,969	29,405	24,231	0	10,930	20,636	1,500
Total, 1st 100 insts.	8,319,436	7,684,165	7,067,160	6,353,598	1,197,074	2,525,127	4,250,434	346,801

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-58. R&D expenditures in the life sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Life sciences total				1991 subfields			
	1991	1990	1989	1988	Agri-cultural sciences	Bio-logical sciences	Medical sciences	Other
101 SUNY Hlth Sci Ctr - Brkln	32,824	22,873	20,523	18,374	0	8,901	23,923	0
102 University of New Mexico	29,881	27,115	25,353	21,686e	0	16,384	9,640	3,857
103 Univ of P R-Mayaguez	28,448i	27,165	26,522	23,822	28,247i	201i	0i	0i
104 U of Neb Med Ctr at Omaha	27,858	17,844	17,291	14,684	0	17,875	9,983	0
105 Univ of Hawaii-Manoa	27,060	22,662	20,602	19,951	10,191	8,715	1,716	6,438
106 California Inst of Tech	26,275	24,857	23,012	20,964	0	26,275	0	0
107 Med Univ of S. Carolina	25,877	23,128	23,017	20,949	0	9,745	15,920	212e
108 Rush University	25,341	20,363	21,213	19,293	0	4,559	19,323	1,459
109 University of Idaho	24,828	22,172	21,398	20,263	18,998	5,359	471	0
110 Univ of Ark Fayetteville	24,756	22,032	19,596	17,793	22,997	1,698	61	0
Total, 1st 110 insts.	8,592,584	7,914,376	7,285,687	6,551,377	1,277,507	2,624,839	4,331,471	358,767
111 The Medical Col of Penna	24,645	18,643	20,542	15,277	0	12,151	12,494	0
112 West Virginia University	23,283	21,707	21,601	18,044	11,305	2,104	7,448	2,426
113 Utah State University	22,247	21,760	21,746	18,650	13,166	5,250	3,831	0
114 Loyola Univ - Chicago	21,229	10,236	9,299	6,578	0	5,572	12,917	2,740
115 Montana State University	20,272	18,593	17,204	17,056	11,713	8,078	0	481
116 Univ of Texas at Austin	18,726	19,785	18,367	16,415	0	12,754	4,314	1,658
117 Princeton University	18,513	17,597	15,272	15,035	0	18,513	0	0
118 St Louis University	18,493	16,083	13,664	9,220	0	9,065	9,424	4
119 New Mexico State Univ	18,183	19,797i	17,488	15,621	11,239	6,846	80	18
120 Brown University	17,979	17,654	16,113	14,115	0	2,172	13,650	2,157
Total, 1st 120 insts.	8,796,154	8,096,231	7,456,983	6,697,388	1,324,930	2,707,344	4,395,629	368,251
121 Texas Tech University	17,260	15,814	16,102	13,527	7,836	4,010	5,319	95
122 George Washington Univ	16,988	19,240	17,420	12,692	0	4,262	12,318	408
123 Univ of Alaska Fairbanks	16,908	17,454	15,080	13,260e	7,935	8,973	0	0
124 Univ of South Carolina	15,674	15,119	12,659	10,356	0	3,907	9,744	2,023
125 Brandeis University	15,608	14,303	13,244	12,154	0	15,608	0	0
126 Univ of Maine Orono	15,586	13,779	12,228	11,316	9,149	6,431	0	6
127 University of Mississippi	15,195	14,649	13,904	12,735	0	7,093	8,102	0
128 New York Medical College	14,633	13,244	12,956	13,817	0	9,218	5,415	0
129 U of Arkansas Med Sci Cam	14,250	11,898	10,834	9,851	0	4,845	9,405	0
130 Florida A & M University	13,686	7,539e	8,240	6,265	7,051	5,986	287	362
Total, 1st 130 insts.	8,951,942	8,239,270	7,589,652	6,813,361	1,356,901	2,777,677	4,446,219	371,145
131 University of Louisville	12,762	12,027	5,760i	7,548i	0	4,765	5,914	2,083
132 Southern Ill U-Carbondale	12,578	12,853	12,260	11,049	3,162	4,167	4,845	384
133 Carnegie-Mellon Univ	12,568	11,400	11,008	10,741	0	12,568	0	0
134 University of Wyoming	12,558	12,216	12,352	11,578	7,294	4,111	1,153	0
135 San Diego State Univ	12,518	9,086	7,931	7,593	2,534	5,698	3,968	318
136 Medical Col of Georgia	12,082	12,052	11,363	9,925	0	6,621	4,701	760
137 Hahnemann University	12,080i	12,134	10,428	8,222	0i	4,120i	7,569i	391i
138 Univ of Nevada - Reno	11,816	11,364	9,916	9,389	4,207	6,426	495	688
139 Univ of South Alabama	11,205	10,229	9,774	7,974	18	8,320	2,456	411
140 Eastern VA Medical School	11,112	10,496	8,125	6,614	0	6,919	4,193	0
Total, 1st 140 insts.	9,073,221	8,353,127	7,688,569	6,903,994	1,374,136	2,841,392	4,481,513	376,180
141 University of Delaware	10,762	9,093	8,884	7,981	9,309	1,453	0	0
142 Albany Medical College	10,131	9,431	9,827	11,694	0	6,582	3,549	0
143 Univ of Rhode Island	9,796	9,817	9,537i	9,449	5,223	1,849	2,253	471
144 Med Col of Ohio at Toledo	9,353	7,159	6,809	5,495	0	6,336	2,196	821
145 South Dakota State Univ	9,138	7,699	6,888	6,753	7,250	1,208	41	639
146 North Dakota State Univ	8,355	7,865	6,666	5,328	5,814	2,428	113	0
147 Creighton University	8,324	8,929	7,934	7,647	0	0	8,324	0
148 SUNY Col of Env Sci & For	7,892	7,940	7,329	5,077	1,634	6,258	0	0
149 Wright State University	7,696	6,803	4,966	4,165	0	1,528	6,144	24
150 University of Oregon	7,271	7,016	6,007	5,065	0	7,061	0	210
Total, 1st 150 insts.	9,161,939	8,434,879	7,763,416	6,972,648	1,403,366	2,876,095	4,504,133	378,345
Total, all other sampled insts.	301,305	293,804	279,660	283,060	51,193	161,767	63,721	24,624
Estimated total non-sampled insts.	29,660	33,723	35,999	0	9,290	18,858	1,200	312

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-59. Federally financed R&D expenditures in the life sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Life sciences total				1991 subfields			
	1991	1990	1989	1988	Agri-cultural sciences	Bio-logical sciences	Medical sciences	Other
Total, all institutions	5,402,408	5,076,155	4,779,982	4,324,348	379,108	1,950,904	2,830,739	241,656
1 Univ of Cal San Francisco	190,936	175,257	159,906	137,747	0	0	190,936	0
2 Johns Hopkins Univ	177,528	163,223	142,388	123,808	0	45,847	105,005	26,676
3 University of Washington	137,829	125,284	110,463	93,526	7,545	50,190	66,007	14,087
4 Yale University	119,459	116,188	109,353	100,762	317	46,081	73,061	0
5 University of Michigan	117,241	103,528	95,794	90,958	123	38,521	69,814	8,783
6 Univ of Pennsylvania	107,024	96,957	87,977	81,143	0	27,576	79,448	0
7 Harvard University	105,772	102,593	92,840	86,976	0	58,462	47,310	0
8 Univ of Cal Los Angeles	105,228	104,102	102,229	91,085	2	13,144	90,024	2,058
9 Univ of Cal San Diego	105,192	90,706	82,372	75,956	0	10,759	94,433	0
10 Stanford University	102,844	111,727	104,921	95,226	0	6,587	95,793	464
Total, 1st 10 insts.	1,269,053	1,189,565	1,088,243	977,187	7,987	297,167	911,831	52,068
11 University of Minnesota	102,774	97,634	96,625	88,316	9,470	24,208	48,882	20,214
12 Washington University	99,744	93,531	84,052	76,786	0	39,939	58,048	1,757
13 Columbia Univ Main Div	99,324	97,783	86,763	80,221	0	42,550	56,774	0
14 Univ of Wis-Madison	95,697	93,184	88,857	84,190	8,269	31,321	54,753	1,354
15 Duke University	92,290	84,358	78,886	70,759	659	27,561	62,870	1,200
16 Cornell University	84,208	84,922	79,348	72,294	9,178	20,011	50,727	4,292
17 University of Pittsburgh	82,844	72,720	65,851	57,418	0	2,476	64,506	15,862
18 Univ of NC at Chapel Hill	81,066	72,374	73,117	65,163	0	37,992	38,443	4,631
19 Baylor Col of Medicine	78,752	75,793	69,336	60,825	0	47,587	31,165	0
20 Univ Alabama Birmingham	74,489	72,524	66,448	60,781	0	22,673	51,306	510
Total, 1st 20 insts.	2,160,241	2,034,388	1,877,526	1,693,940	35,563	593,485	1,429,305	101,888
21 University of Rochester	71,086	69,149	64,950	60,537	0	27,097	40,649	3,340
22 Yeshiva University	67,831	65,066	58,224	58,813	0	17,635	35,273	14,923
23 Univ of Cal Davis	65,716	64,036	60,397	51,718	18,040	10,465	37,211	0
24 New York University	64,335	63,771	61,409	57,094	0	21,798	30,139	12,398
25 University of Chicago	64,241	64,416	60,430	54,530	0	25,504	38,487	250
26 University of Iowa	59,198	58,187	57,204	49,428	0	16,084	42,729	385
27 Univ of Southern Cal	58,538	57,813	57,030	55,158	0	3,775	54,149	614
28 UT SW Medical Ctr-Dallas	57,746	54,965	51,254	48,357	0	27,876	29,870	0
29 Univ. of Colorado	56,353	54,616	54,135	45,937	0	20,724	33,502	2,127
30 Case Western Reserve Univ	55,712	50,890	47,224	39,975	0	19,949	35,763	0
Total, 1st 30 insts.	2,780,997	2,637,297	2,449,783	2,215,487	53,603	784,392	1,807,077	135,925
31 Emory University	55,188	47,700	42,675	40,124	0	14,639	26,090	14,459
32 Vanderbilt University	54,887	52,674	44,539	35,311	0	27,922	26,485	480
33 SUNY at Buffalo	50,923	49,673	50,830	45,330	0	29,022	20,685	1,216
34 University of Miami	48,164	47,724	44,710	34,863	0	13,298	34,790	76
35 University of Arizona	48,095	39,949	37,351	34,344	6,471	17,704	21,360	2,560
36 University of Utah	45,910	42,728	40,275	37,428	0	16,886	26,673	2,351
37 Univ of Cal Berkeley	45,570	41,857	43,518	40,879	13,985	24,106	7,479	0
38 Ohio State University	45,241	42,665	40,523	33,563	8,557	18,312	16,023	2,349
39 Boston University	44,027	45,408	44,376	42,686	0	2,891	40,693	443
40 Univ of MD Balt Prof Sch	43,682	38,841	35,970	33,102	0	6,552	34,946	2,184
Total, 1st 40 insts.	3,262,684	3,086,516	2,874,550	2,593,117	82,616	955,724	2,062,301	162,043
41 Virginia Commonwlth Univ	42,929	39,440	33,324	29,881	0	15,582	26,536	811
42 Univ of Massachusetts	42,313	29,848	31,249	25,985	1,466	20,172	17,641	3,034
43 CUNY Mt Sinai Sch of Med	42,035	43,607	37,233	32,852	0	12,972	29,063	0
44 University of Florida	39,875	36,453	34,902	33,264	8,010	14,497	15,241	2,127
45 Pennsylvania State Univ	39,322	35,704	32,852	30,559	7,720	19,422	11,389	791
46 Univ of Med & Dent of N J	38,768	33,185	27,983	21,849	0	11,216	27,552	0
47 Indiana University	36,076	33,223	33,482	27,983	0	11,637	23,270	1,169
48 Northwestern University	35,117	34,869	33,207	31,652	0	20,792	13,538	787
49 University of Georgia	34,728	34,431	32,523	30,577	8,532	23,513	2,683	0
50 University of Connecticut	34,516	32,658	34,693	30,412	1,469	14,066	18,522	459
Total, 1st 50 insts.	3,648,363	3,439,934	3,206,198	2,888,131	109,813	1,119,593	2,247,736	171,221

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-59. Federally financed R&D expenditures in the life sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Life sciences total				1991 subfields			
	1991	1990	1989	1988	Agri-cultural sciences	Bio-logical sciences	Medical sciences	Other
51 University of Cincinnati	34,159	32,820	30,550	27,067	0	22,083	12,076	0
52 Georgetown University	33,957	29,137	29,642	24,368	0	10,776	23,181	0
53 Mass Inst of Technology	33,289	32,758	29,782	29,010	0	33,289	0	0
54 Wake Forest University	32,811	29,671	28,334	22,896	0	493	32,318	0
55 U Tex Hlth Sci Ctr S Anto	32,770	29,431	29,324	27,528	0	12,489	20,281	0
56 Rockefeller University	32,571	31,375	36,675	33,428	0	29,826	2,745	0
57 U Tex Hlth Sci Ctr Houstn	32,301	27,835	28,089	26,355	0	10,681	20,824	796
58 Univ of Cal Irvine	32,290	34,182	29,586	26,618	0	23,271	9,019	0
59 Michigan State University	31,781i	30,013	27,682	26,824	14,381i	13,515i	3,600i	285i
60 University of Virginia	31,761	30,665	26,963	26,394	0	15,290	16,470	1
Total, 1st 60 insts.	3,976,053	3,747,821	3,502,825	3,158,619	124,194	1,291,306	2,388,250	172,303
61 Tufts University	31,624	30,518	33,168	35,216	60	26,258	4,542	764
62 Univ of Ill Chicago	30,762	32,058	32,438	28,268	0	12,448	18,314	0
63 Tulane University	30,510	24,894	22,147	20,539	0	4,257	14,047	12,214
64 SUNY at Stony Brook	30,230	27,702	25,910	28,081	0	17,716	11,050	1,464
65 Univ. Of Tennessee System	29,582	28,446	28,573	26,685	4,570	12,784	10,394	1,834
66 UT MD Anderson Cancer Ctr	29,336	25,982	25,870	24,161	0	15,995	13,341	0
67 U of VT & State Agr Coll	28,356	28,017	25,864	23,105	1,568	12,692	13,487	609
68 Oregon Hlth Sciences Univ	27,744i	26,154i	23,197	17,668	0i	8,520i	17,868i	1,356i
69 Dartmouth College	27,563	22,735i	20,537	19,009	0	746	26,817	0
70 Purdue University	27,515	25,697	23,975	22,404	4,232	16,621	5,749	913
Total, 1st 70 insts.	4,269,283	4,020,024	3,764,504	3,403,755	134,624	1,419,343	2,523,859	191,457
71 Louisiana State Univ Sys	26,470	28,599	26,177	23,203	854	15,766	9,183	667
72 Colorado State University	26,232	22,459	20,906	19,144	9,336	16,238	658	0
73 Wayne State University	25,323	23,079	21,744	17,680	0	509	22,716	2,098
74 Medical College of Wis	25,062	21,594	21,432	19,803	0	7,268	17,794	0
75 Oregon State University	24,112	21,948	21,400	21,394	10,438	6,976	1,158	5,540
76 University of Kentucky	23,700	21,041	19,399	20,760	7,134	743	15,280	543
77 Texas A & M University	23,178	20,262	22,469	24,628	6,065	15,068	2,045	0
78 Thomas Jefferson Univ	23,100	22,451	21,311	16,766	0	9,741	11,860	1,499
79 University of Ill Urbana	23,033	22,589	25,525	24,010	7,098	13,908	2,027	0
80 U Tex Med Brnch Galveston	20,974	21,693	23,152	19,717	0	8,917	9,759	2,298
Total, 1st 80 insts.	4,510,467	4,245,739	3,988,019	3,610,860	175,549	1,514,477	2,616,339	204,102
81 Univ of Missouri Columbia	20,858	19,340	17,948	16,116	5,471	9,299	6,087	1
82 Temple University	20,532	19,551	20,920	18,164	0	13,252	7,273	7
83 California Inst of Tech	20,485	18,668	17,524	14,884	0	20,485	0	0
84 Washington State Univ	20,302	18,048	15,611	13,817	8,082	11,175	613	432
85 N C State Univ at Raleigh	20,177	19,244	18,937	17,302	7,797	9,534	0	2,846
86 Univ of Nebraska-Lincoln	19,845	16,259	18,552	17,612	18,514	554	777	0
87 SUNY Hlth Sci Ctr - Brkln	17,949	14,574	11,552	10,754	0	6,009	11,940	0
88 Iowa St U of Sci & Tech	17,328	16,825	14,476	11,419	8,558	6,154	621	1,995
89 Rutgers the St Univ of NJ	16,372	12,821	11,762	9,374	3,104	9,045	3,998	225
90 St Louis University	15,680	13,264	11,688	7,863	0	8,227	7,453	0
Total, 1st 90 insts.	4,699,995	4,414,333	4,146,989	3,748,165	227,075	1,608,211	2,655,101	209,608
91 University of Kansas	15,655	15,184	15,951	15,651	0	10,352	4,523	780
92 The Medical Col of Penna	14,960	11,704	11,514	9,020	0	8,671	6,289	0
93 Med Univ of S. Carolina	14,367	10,910	11,547	10,956	0	6,261	8,106	0
94 Brown University	13,775	14,315	12,956	12,343	0	1,895	10,243	1,637
95 Loyola Univ - Chicago	13,720	4,814	4,695	3,513	0	2,914	8,540	2,266
96 University of New Mexico	13,297	10,373	9,720	9,783	0	6,534	4,556	2,207
97 George Washington Univ	13,185	15,728	14,279	10,269e	0	3,163	9,676	346
98 Unif Serv Univ of Hlth Sc	12,846	11,288	12,706	12,613	0	5,590	7,256	0
99 VA Polytech Inst & St U	12,257	13,035	12,417	11,329	7,011	3,888	796	562
100 Florida A & M University	12,066	6,891e	7,692	6,265	6,037	5,768	261	0
Total, 1st 100 insts.	4,836,123	4,528,575	4,260,466	3,849,907	240,123	1,663,247	2,715,347	217,406

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-59. Federally financed R&D expenditures in the life sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Life sciences total				1991 subfields			
	1991	1990	1989	1988	Agri-cultural sciences	Bio-logical sciences	Medical sciences	Other
101 Univ of P R-Mayaguez	11,987i	11,759	12,003	10,638	11,786i	201i	0i	0i
102 Brandeis University	11,542	10,549	10,685	10,181	0i	11,542i	0i	0i
103 New York Medical College	11,056	9,028	10,021	11,097	0	7,300	3,756	0
104 Mississippi State Univ	11,033	9,910	8,710	7,905	9,929	909	195	0
105 Princeton University	10,891	11,174	8,967	9,602	0	10,891	0	0
106 SUNY Hlth Sci Ctr - Syrcs	10,667	9,965	9,520	7,497	0	8,005	2,662	0
107 West Virginia University	10,557	11,448	10,264	9,621	4,927	1,769	2,973	898
108 U of Neb Med Ctr at Omaha	10,518	9,078	8,572	7,765	0	6,683	3,835	0
109 Univ of Texas at Austin	10,492	10,153	10,818	9,834	0	7,532	2,316	644
110 Univ of Hawaii-Manoa	10,419	8,474	8,077	8,381	1,616	3,671	1,148	3,984
Total, 1st 110 insts.	4,945,295	4,630,113	4,358,103	3,942,518	268,381	1,721,750	2,732,232	222,932
111 Kans St U - Ag & App Sci	10,404	9,392	9,602	8,822	7,469	2,793	142	0
112 Univ of Cal Riverside	10,382	10,499	10,018	10,305	7,759	1,052	1,571	0
113 Univ of MD College Park	10,357e	6,287	6,546	5,825	3,643e	5,624e	0	1,090
114 University of Oklahoma	9,971	9,289	8,909	8,526	0	4,363	5,523	85
115 Utah State University	9,326	10,194	10,611	8,693	5,502	1,277	2,547	0
116 University of Mississippi	9,132	8,947	8,551	7,836	0	5,369	3,763	0
117 University of Idaho	8,523	7,246	6,980	6,588	6,445	1,774	304	0
118 Univ of South Carolina	8,352	8,328	7,403	6,380	0	2,473	5,152	727
119 Medical Col of Georgia	8,081	8,045	7,392	7,621	0	5,805	2,228	48
120 U of Arkansas Med Sci Cam	7,807	6,654	5,258	5,846	0	2,920	4,887	0
Total, 1st 120 insts.	5,037,630	4,714,994	4,439,373	4,018,960	299,199	1,755,200	2,758,349	224,882
121 Univ of South Florida	7,761	6,250	5,787	4,393	0	758	6,983	20
122 New Mexico State Univ	7,728	8,463i	7,066	5,228	3,509	4,132	71	16
123 Clemson University	7,693	5,838	5,001	6,032	4,013	3,470	0	210
124 Univ of Ark Fayetteville	7,506	6,754	5,466	5,080	7,158	348	0	0
125 San Diego State Univ	7,364	6,263	5,844	5,721	2,534	3,165	1,569	96
126 Hahnemann University	7,221i	7,406	7,478	6,642	0i	3,736i	3,480i	5i
127 Eastern VA Medical School	7,093	7,782	6,887	5,291	0	6,252	841	0
128 Meharry Medical College	7,014	6,391	6,397	5,125	0	5,971	1,043e	0
129 Univ of South Alabama	6,902	6,771	6,587	5,135	0	5,019	1,734	149
130 Oklahoma State University	6,625	6,754	7,307	7,188	3,669	2,771	165	20
Total, 1st 130 insts.	5,110,537	4,783,666	4,503,193	4,074,795	320,082	1,790,822	2,774,235	225,398
131 Albany Medical College	6,291	6,073	7,259	7,915	0	4,971	1,320	0
132 Rush University	6,174	5,392	7,159	6,157	0	2,734	3,300	140
133 Montana State University	6,115	5,816	4,834	7,249	3,067	2,677	0	371
134 University of Oregon	6,062	5,803	4,876	4,278	0	5,871	0	191
135 University of Wyoming	6,041	6,001	6,321	5,387	3,124	2,543	374	0
136 Med Col of Ohio at Toledo	5,970	5,956	5,855	4,530	0	4,664	1,306	0
137 Auburn University	5,843	6,760	5,875	7,455	4,759	1,013	71	0
138 Univ of Alaska Fairbanks	5,355	6,324	5,435	4,779e	1,492	3,863	0	0
139 University of Louisville	5,349	7,006	3,756i	3,429i	0	2,682	2,299	368
140 Chas R Drew U of Med & Sc	5,311	3,796i	2,281	2,826	0	0	5,311	0
Total, 1st 140 insts.	5,169,048	4,842,593	4,556,844	4,128,800	332,524	1,821,840	2,788,216	226,468
141 Carnegie-Mellon Univ	5,197	4,625	4,838	5,496	0	5,197	0	0
142 Southern Ill U-Carbondale	5,121	5,303	4,462	4,205	1,258	2,215	1,614	34
143 Univ of Nevada - Reno	5,054	6,524	4,491	5,231	300	4,047	53	654
144 Morehouse School of Med	5,020i	5,149i	4,238	1,815	0i	5,020i	0i	0i
145 Wright State University	4,887	4,238	2,780	2,350	0	784	4,101	2
146 Syracuse University	4,580	3,783	4,555	4,683	0	2,709	1	1,870
147 Univ of Maine Orono	4,548	4,305	3,984	4,109	1,531	3,017	0	0
148 Texas Tech University	4,343	4,013	4,549	5,015	811	2,149	1,383	0
149 North Dakota State Univ	4,122	4,044	3,399	2,374	2,844	1,267	11	0
150 Arizona State University	4,002	3,228	2,226	1,898	65	3,289	0	648
Total, 1st 150 insts.	5,215,922	4,887,805	4,596,366	4,165,976	339,333	1,851,534	2,795,379	229,676
Total, all other sampled insts.	175,403	175,508	170,207	158,372	38,949	89,586	34,888	11,980
Estimated total non-sampled insts.	11,083	12,842	13,409	0	826	9,784	472	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-60. Total and federally financed R&D expenditures in the agricultural sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1901	1990	1989	1988
Total, all institutions	1,463,849	1,356,408	1,285,994	1,176,331	379,108	352,259	348,511	322,523
1 Univ of Cal Davis	92,896	92,153	86,517	72,084	18,040	15,627	16,339	13,983
2 University of Georgia	55,861	54,494	51,108	49,968	8,532	8,421	8,126	8,273
3 University of Minnesota	50,863	47,070	46,514	41,493	9,470	9,423	9,594	8,155
4 Univ of Nebraska-Lincoln	48,814	45,945	41,360	38,586	18,514	14,965	17,131	15,860
5 Univ of Cal Berkeley	47,719	46,886	42,221	35,351	13,985	12,763	12,085	10,889
6 Michigan State University	46,285i	44,216	43,703	41,763	14,381i	13,580	13,437	12,642
7 Cornell University	43,900	42,578	42,913	39,311	9,178	8,624	9,054	8,005
8 Univ of Cal Riverside	42,555	41,103	39,034	38,172	7,759	7,835	7,217	7,205
9 Texas A & M University	40,244	38,997	36,144	34,274	6,065	5,533	7,408	7,530
10 Univ of MD College Park	39,962	4,261	4,326	4,359	3,643e	1,253	1,065	1,133
Total, 1st 10 insts.	509,099	457,703	433,840	395,361	109,567	98,024	101,456	93,675
11 Louisiana State Univ Sys	38,406	36,396	33,782	34,054	854	1,128	848	913
12 N C State Univ at Raleigh	37,659	36,440	37,121	35,134	7,797	7,802	8,180	8,736
13 VA Polytech Inst & St U	35,933	34,642	30,851	24,233	7,011	7,407	7,210	5,745
14 Pennsylvania State Univ	35,852	37,407	33,423	29,820	7,720	7,848	7,553	8,314
15 Ohio State University	34,776	33,045	33,914	28,602	8,557	8,816	7,245	6,409
16 Mississippi State Univ	33,339	33,358	32,292	28,112	9,929	9,022	7,893	7,036
17 Oregon State University	31,921	27,105	30,270	28,264	10,438	8,225	8,326	7,644
18 Kans St U - Ag & App Sci	31,691	29,423	27,695	24,862	7,469	6,304	6,238	5,391
19 Univ of Missouri Columbia	31,425	30,113	27,265	22,719	5,471	6,578	6,483	5,772
20 University of Kentucky	29,971	27,305	26,736	29,357	7,134	7,790	6,830	9,210
Total, 1st 20 insts.	850,072	782,937	747,189	680,518	181,947	168,944	168,262	158,845
21 University of Arizona	28,353	22,076	17,520	14,180	6,471	4,428	2,944	2,408
22 Univ of P R-Mayaguez	28,247i	26,967	26,440	23,785	11,786i	11,561	11,949	10,610
23 Auburn University	27,875	29,153	32,161	32,505	4,759	5,929	5,673	7,293
24 University of Ill Urbana	26,036	25,750	23,176	22,036	7,098	7,193	8,019	7,389
25 Iowa St U of Sci & Tech	25,216	28,453	26,045	21,244	8,558	8,509	8,287	5,221
26 Clemson University	24,770	23,634	20,098	17,692	4,013	3,588	3,144	3,680
27 Washington State Univ	24,581	21,761	19,580	19,763	8,082	7,088	6,226	5,508
28 Purdue University	24,010	21,867	20,899	19,257	4,232	3,575	4,125	3,995
29 University of Florida	23,958	25,193	22,480	20,025	8,010	8,272	8,125	7,519
30 Oklahoma State University	23,712	22,355	21,140	16,705	3,669	3,682	4,406	4,137
Total, 1st 30 insts.	1,106,830	1,030,146	976,728	887,710	248,625	232,769	231,160	216,605
31 Univ of Wis-Madison	23,154	28,087	22,312	21,431	8,269	10,407	8,646	8,514
32 Univ of Ark Fayetteville	22,997	21,115	18,521	16,888	7,158	6,609	5,249	4,884
33 Univ. Of Tennessee System	22,068	20,894	20,956	19,186	4,570	4,248	3,986	3,954
34 Rutgers the St Univ of NJ	21,252	19,184	15,832	14,785	3,104	2,941	2,618	2,622
35 University of Idaho	18,998	16,497	16,366	16,690	6,445	4,820	4,906	4,998
36 Colorado State University	14,990	14,584	12,539	10,897	9,336	7,073	6,802	5,933
37 Utah State University	13,166	12,637	12,635	10,707	5,502	5,424	5,650	4,148
38 University of Washington	12,074	10,309	8,197	6,721	7,545	6,716	5,743	4,628
39 Montana State University	11,713	12,144	12,929	13,139	3,067	2,677	2,834	5,082
40 West Virginia University	11,305	11,293	7,256	6,848	4,927	4,892	3,573	3,594
Total, 1st 40 insts.	1,278,547	1,196,890	1,124,271	1,025,002	308,548	288,576	281,167	264,962
41 New Mexico State Univ	11,239	10,447i	9,302	8,993	3,509	3,588i	2,995	2,483
42 Univ of Hawaii-Manoa	10,191	8,866	8,018	7,379	1,616	1,273	1,316	998
43 University of Delaware	9,309	7,472	7,123	6,439	1,398	1,444	1,423	1,347
44 Univ of Maine Orono	9,149	7,763	7,063	6,201	1,531	1,556	1,452	1,416
45 Univ of Massachusetts	8,360	8,385	11,562	11,234	1,466	1,479	3,432	3,301
46 University of Connecticut	8,249	5,171	4,829	3,817	1,469	1,479	1,447	1,148
47 Univ of Alaska Fairbanks	7,935	7,341	7,538	6,628e	1,492	1,921	2,239	1,969e
48 Texas Tech University	7,836	6,993	6,929	5,594	811	709	604	536
49 University of Wyoming	7,294	7,082	7,206	7,184	3,124	3,149	3,225	3,270
50 South Dakota State Univ	7,250	6,104	5,532	5,353	2,492	2,197	1,876	1,810
Total, 1st 50 insts.	1,365,359	1,272,514	1,199,373	1,093,824	327,456	307,371	301,176	283,240

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-60. Total and federally financed R&D expenditures in the agricultural sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 Florida A & M University	7,051	3,614e	3,732	2,750	6,037	2,976	3,732	2,750
52 North Dakota State Univ	5,814	5,651	4,573	2,942	2,844	3,002	2,227	1,362
53 Univ of Rhode Island	5,223	1,866	5,591i	5,597	272	0	3,747i	3,922
54 U of VT & State Agr Coll	4,681	4,481	4,097	3,997	1,568	1,612	1,500	1,451
55 Univ of Nevada - Reno	4,207	5,633	5,499	4,881	300	2,065	1,497	1,809
56 Virginia State University	3,716	1,886	2,093	1,882	3,268	1,372	1,579	1,882
57 Southern U & A&M College	3,645	2,840	1,812	1,718	2,508	2,520	1,469	1,718
58 Univ of New Hampshire	3,527	3,385	3,044	3,082	1,613e	1,246	1,259	1,475
59 Southern Ill U-Carbondale	3,182	2,017	2,020	1,715	1,258	518	112	131
60 NC Ag & Tech State Univ	3,181	2,780	2,348	2,794	2,928	2,583	2,299	2,791
Total, 1st 60 insts.	1,409,586	1,306,667	1,234,182	1,125,182	350,072	325,265	320,597	302,531
61 Lincoln University	2,602	2,486	2,500e	--	2,339	2,315	2,424e	--
62 San Diego State Univ	2,534	1,867	1,345	1,279	2,534	1,854	1,341	1,277
63 Prairie View A & M Univ	2,527	2,598	2,767	630e	2,429	2,510	2,670	600
64 Alabama A & M University	2,433	3,056	2,762	3,843	1,914	2,260	1,956	3,127
65 University of Montana	2,430	2,373	2,076	2,191e	1,113	1,005	914	965e
66 Duke University	2,180	1,740	993	1,135	659	431	440	430
67 Michigan Tech University	2,179	2,047	2,309	1,728	895	628	641	393
68 Texas A & I University	2,124	1,989	1,923	1,872	234	219	225	320
69 Tuskegee University	1,804e	1,880	1,713i	1,203	1,747	1,878	1,599i	1,141
70 Tennessee State Univ	1,781	1,520	1,665	1,622	1,781	1,520	1,608	1,596
Total, 1st 70 insts.	1,432,180	1,328,223	1,254,235	1,140,685	365,717	339,885	334,415	312,380
71 SUNY Col of Env Sci & For	1,634	1,716	1,685	2,976	76	99	126	257
72 Kentucky State University	1,535i	2,163i	1,303	547	1,535i	2,163i	1,303	547
73 Alcorn State University	1,534	1,913	1,766	950i	1,461	1,465	1,766	950i
74 Univ of Ark Pine Bluff	1,399	1,188	1,148	1,199	1,202	1,188	1,148	1,199
75 Langston University	1,310	1,200	2,349	--	1,310	1,200	1,961	--
76 U of MD Eastern Shore	1,298	1,427	2,815	1,291	1,049	1,168	2,074	1,291
77 Yale University	1,209	1,063	1,234	930	317	212	378	344
78 Northern Arizona Univ	1,208	1,033	1,333	1,219	278	283	242	275
79 Northern Illinois Univ	1,111	0i	0	0	592	0i	0	0
80 Univ of Cal Santa Cruz	1,083	917	792	750	7	5	4	3
Total, 1st 80 insts.	1,445,501	1,340,843	1,268,660	1,150,547	373,544	347,668	343,417	317,246
81 Brigham Young University	992	601	678i	565	558	202	82i	97
82 University of D C	942	831	760i	681	533	399	405i	409
83 Stephen F Austin St Univ	923	834	1,015	632	282	289	320	271
84 Delaware State College	873	638	638	--	873	531	531	--
85 U of the Virgin Islands	867i	1,011e	980	960	853i	995e	980	960
86 Cal Poly St U San Luis Ob	668	612	745	244	51	70	67	61
87 Georgia Institute of Tech	610	0	0	0	350	0	0	0
88 Arkansas State University	446	381	355	189	0	0	0	0
89 Southern Univ-New Orleans	379i	432i	390e	--	328i	382i	348e	--
90 Fort Valley State Univ.	279i	268i	246e	--	263i	249i	224e	--
Total, 1st 90 insts.	1,452,480	1,346,451	1,274,467	1,153,818	377,635	350,785	346,374	319,044
91 Tenn Technological Univ	252	81	32	7	5	15	5	2
92 Univ of Southwestern LA	213	214	283	265	14	8	60	81
93 Univ of Wis-Stevens Point	205	116	297	206	52	67	115	72
94 Western Michigan Univ	195	22	11i	0	0	0	0i	0
95 Illinois State University	163	32	14	24	42	0	0	0
96 Arizona State University	158	111	0	0	65	15	0	0
97 University of Michigan	129	153	0	0	123	147	0	0
98 Louisiana Tech University	100i	186i	197e	142	66i	161i	175e	126
99 Clark Atlanta University	92	45i	0e	--	92	45i	0e	--
100 Tufts University	79	4	337	365e	60	4	337	358e
Total, 1st 100 insts.	1,454,066	1,347,415	1,275,638	1,154,827	378,154	351,247	347,066	319,683
Total, all other sampled insts.	493	414	1,322	21,504	128	194	419	2,840
Estimated total non-sampled insts.	9,290	8,579	9,034	0	826	818	1,026	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-61. Total and federally financed R&D expenditures in the biological sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	3,056,720	2,854,582	2,638,066	2,397,431	1,950,904	1,841,096	1,732,416	1,601,646
1 Baylor Col of Medicine	77,138	68,716	57,948	37,362	47,587	44,003	28,427	26,762
2 Harvard University	72,417	68,950	66,372	62,859	58,462	58,242	56,338	54,706
3 Texas A & M University	67,121	63,850	64,365	61,696	15,068	12,804	14,150	14,008
4 Rockefeller University	61,707	58,846	59,636	54,486	29,826	27,671	33,054	31,756
5 Johns Hopkins Univ	59,710	57,474	51,837	47,864	45,847	42,590	39,742	37,732
6 Univ of Wis-Madison	58,766	51,297	51,369	50,888	31,321	28,145	28,718	28,297
7 University of Michigan	57,119	54,127	49,229	48,363	38,521	38,605	35,806	34,979
8 Washington University	56,545	55,023	43,074	39,051	39,939	38,686	31,475	28,514
9 University of Washington	56,042	49,401	44,665	37,230	50,190	45,022	40,078	34,706
10 Yale University	55,776	54,898	52,842	50,462	46,081	48,294	46,848	43,894
Total, 1st 10 insts.	622,341	582,582	541,337	490,261	402,842	384,062	354,636	335,354
11 Univ of NC at Chapel Hill	49,539	44,205	43,086	37,342	37,992	34,809	35,094	31,379
12 Columbia Univ Main Div	49,278	47,751	37,100	35,267	42,550	41,967	33,581	31,150
13 UT MD Anderson Cancer Ctr	44,461	39,053	36,330	30,952	15,995	13,493	13,056	11,237
14 University of Georgia	43,676	42,588	39,347	39,293	23,513	23,476	21,809	20,180
15 UT SW Medical Ctr-Dallas	40,843	36,474	32,266	27,775	27,876	25,586	22,577	21,218
16 University of Minnesota	40,172	36,218	27,600	24,259	24,208	23,464	18,150	15,506
17 Cornell University	39,340	39,731	41,361	38,797	20,011	20,642	20,244	19,639
18 Purdue University	37,073	34,342	30,724	28,728	16,621	15,518	14,614	14,470
19 SUNY at Buffalo	34,817	34,412	35,895	34,008	29,022	29,001	30,670	29,182
20 Mass Inst of Technology	34,396	37,711	34,049	34,451	33,289	32,758	29,509	28,744
Total, 1st 20 insts.	1,035,938	975,067	899,095	821,133	673,919	644,776	593,940	558,059
21 Ohio State University	33,657	32,314	30,304	26,383	18,312	17,028	16,783	14,031
22 Univ Alabama Birmingham	33,194	31,192	24,851	21,972	22,673	22,248	19,295	17,531
23 Duke University	32,910	30,788	29,050	27,809	27,561	26,856	25,353	24,136
24 Pennsylvania State Univ	32,896	30,910	29,238	23,536	19,422	17,387	17,120	14,762
25 Univ of Pennsylvania	32,800	31,681	28,347	28,837	27,576	26,756	24,841	23,419
26 N C State Univ at Raleigh	32,438	31,752	30,363	25,764	9,534	9,280	8,703	7,447
27 University of Cincinnati	31,538	28,927	25,483	22,304	22,083	20,148	17,675	15,322
28 Rutgers the St Univ of NJ	31,332	29,044	27,706	24,230	9,045	6,847	6,588	5,511
29 Tufts University	31,289	30,544	31,732	34,375e	26,258	25,476	27,395	29,087e
30 New York University	30,958	28,582	28,480	28,284	21,798	21,385	23,167	23,223
Total, 1st 30 insts.	1,358,950	1,280,801	1,184,649	1,084,627	878,181	838,187	780,860	732,528
31 Univ of MD College Park	30,936	10,632	10,483	8,874	5,624e	3,374	3,253	2,973
32 Univ of Cal Berkeley	30,685	27,161	29,188	27,936	24,106	21,239	23,780	22,935
33 Northwestern University	30,591	29,865	27,298	24,616	20,792	20,389	19,046	18,026
34 University of Rochester	30,422	29,701	29,572	27,655	27,097	26,144	26,419	24,375
35 Vanderbilt University	30,340	28,932	23,110	21,507	27,922	26,442	21,140	17,206
36 University of Chicago	30,192	28,992	28,137	26,193	25,504	25,517	24,771	23,230
37 Univ of Cal Irvine	29,489	14,805	13,197	11,834	23,271	11,587	10,054	9,277
38 Univ of Cal Davis	29,382	29,489	26,719	24,768	10,465	9,913	9,536	9,271
39 University of Arizona	29,334	25,258	23,099	21,264	17,704	14,602	13,187	12,997
40 Louisiana State Univ Sys	28,932	23,704	21,399	19,492	15,766	12,154	12,263	10,814
Total, 1st 40 insts.	1,659,253	1,529,340	1,416,851	1,298,766	1,076,432	1,009,548	944,309	883,632
41 Case Western Reserve Univ	27,954	21,901e	18,093	18,936	19,949	18,41[illegible]	15,419	15,365
42 Univ. of Colorado	27,564	26,781	28,026	26,441	20,724	20,709	22,405	20,811
43 University of Connecticut	27,182	28,660	28,694	24,570	14,066	13,751	15,099	13,049
44 California Inst of Tech	26,275	24,857	23,012	20,964	20,485	18,668	17,524	14,884
45 Univ of Massachusetts	26,016	19,039	24,226	16,644	20,172	13,780	14,597	11,705
46 Iowa St U of Sci & Tech	25,977	26,160	20,627	17,525	6,154	6,407	4,730	4,677
47 SUNY at Stony Brook	25,296	20,585	20,744	26,532	17,716	15,840	15,685	18,321
48 Temple University	23,858	23,491	20,002	16,478	13,252	13,552	13,554	11,319
49 Washington State Univ	23,841	21,736	17,761	16,509	11,175	10,172	8,725	7,803
50 Univ of Med & Dent of N J	23,684	21,071	13,126	11,792	11,216	10,025	9,331	8,585
Total, 1st 50 insts.	1,916,900	1,763,621	1,631,164	1,495,157	1,231,341	1,150,866	1,081,378	1,010,151

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-61. Total and federally financed R&D expenditures in the biological sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 Colorado State University	23,543	21,002	17,414	15,751	16,238	15,031	13,486	12,785
52 University of Florida	23,319	20,537	18,380	18,208	14,497	11,563	11,315	11,422
53 University of Iowa	23,314	22,498	21,356	18,289	16,084	15,575	15,522	13,120
54 Univ of Missouri Columbia	22,635	21,487	19,471	19,205	9,299	8,205	7,641	6,864
55 Yeshiva University	22,547	21,831	19,366	19,596	17,635	16,917	15,138	15,294
56 University of Kansas	22,331	19,102	19,093	16,997	10,352	10,200	10,751	10,472
57 Michigan State University	21,640i	20,567	21,130	21,317	13,515i	12,764	11,034	11,586
58 University of Ill Urbana	21,210	20,137	18,934	19,152	13,908	14,040	13,864	14,762
59 University of Virginia	20,757	20,553	18,327	18,339	15,290	14,893	13,455	13,948
60 Virginia Commonwlth Univ	20,700	20,527	17,485	15,416	15,582	14,671	12,772	12,310
Total, 1st 60 insts.	2,138,896	1,971,862	1,822,120	1,677,427	1,373,741	1,284,725	1,206,356	1,132,714
61 University of Utah	20,691	19,310	16,390	13,870	16,886	15,808	13,090	11,341
62 Univ of Ill Chicago	19,809	22,588	19,958	14,977	12,448	12,798	12,482	9,197
63 Univ. Of Tennessee System	18,571	17,260	17,381	16,791	12,784	11,486	11,591	11,365
64 Princeton University	18,513	17,597	15,272	15,035	10,891	11,174	8,967	9,602
65 U of Neb Med Ctr at Omaha	17,875	11,786	12,241	10,610	6,683	6,583	6,872	6,278
66 U Tex Hlth Sci Ctr S Anto	17,628	16,753	16,338	15,094	12,489	12,058	12,033	11,309
67 Emory University	17,575	16,628	15,747	14,533	14,639	13,486	14,076	12,756
68 Univ of Cal Los Angeles	17,422	20,979	18,085	15,481	13,144	12,830	14,270	12,192
69 Indiana University	17,420	15,469	13,430	12,802	11,637	10,911	9,898	9,187
70 U of VT & State Agr Coll	16,393	16,274	15,783	13,851	12,692	12,998	12,400	11,179
Total, 1st 70 insts.	2,320,793	2,146,506	1,982,745	1,820,471	1,498,034	1,404,857	1,322,035	1,237,120
71 University of New Mexico	16,384	16,060	15,621	12,440e	6,534	5,321	5,368	4,708e
72 Oregon State University	15,974	14,968	11,989	12,828	6,976	7,476	6,786	7,345
73 CUNY Mt Sinai Sch of Med	15,892	16,934	14,118	11,757	12,972	13,866	11,045	7,813
74 U Tex Hlth Sci Ctr Houstn	15,871	15,608	15,357	13,713	10,681	11,039	10,904	10,468
75 Brandeis University	15,608	14,303	13,244	12,154	11,542i	10,549	10,685	10,181
76 University of Miami	15,525	16,371	16,586	14,746	13,298	13,862	12,565	10,849
77 Univ of MD Balt Prof Sch	13,472	12,553	11,378	10,318	6,552	5,826	5,395	4,965
78 U Tex Med Brnch Galveston	13,393	12,589	13,022	10,964	8,917	8,773	9,654	8,233
79 Georgetown University	13,207	12,112	10,805	9,690	10,776	9,817	8,801	7,708
80 Univ of Texas at Austin	12,754	14,080	13,147	12,393	7,532	7,002	7,672	7,558
Total, 1st 80 insts.	2,468,873	2,292,084	2,118,012	1,941,474	1,593,814	1,498,388	1,410,910	1,316,948
81 Carnegie-Mellon Univ	12,568	11,400	11,008	10,741	5,197	4,625	4,838	5,496
82 The Medical Col of Penna	12,151	8,618	11,885	9,570	8,671	6,982	7,443	6,035
83 Univ of Cal San Diego	12,013	11,405	10,850	9,512	10,759	10,348	9,828	8,778
84 SUNY Hlth Sci Ctr - Syrcs	11,943	10,570	9,787	7,868	8,005	7,059	6,476	4,766
85 Medical College of Wis	11,729	11,218	12,439	11,546	7,268	6,996	7,628	9,396
86 VA Polytech Inst & St U	11,547	13,090	11,557	12,198	3,888	4,189	3,492	4,559
87 University of Oklahoma	11,273	9,352	9,882	9,881	4,363	4,049	5,079	5,014
88 Thomas Jefferson Univ	10,930	10,164	10,250	7,231	9,741	9,325	9,554	5,131
89 Oregon Hlth Sciences Univ	10,758i	10,519i	9,042	7,016	8,520i	8,032i	7,124	4,634
90 Med Univ of S. Carolina	9,745	8,055	9,685	9,858	6,261	4,408	5,461	5,548
Total, 1st 90 insts.	2,583,530	2,396,475	2,224,397	2,036,895	1,666,487	1,564,401	1,477,833	1,376,305
91 Oklahoma State University	9,349	8,611	7,628	9,800	2,771	2,993	2,764	2,936
92 New York Medical College	9,218	7,878	7,207	10,170	7,300	6,076	5,977e	8,555
93 St Louis University	9,065	8,342	7,517	5,025	8,227	7,489	7,224	4,708
94 Univ of Alaska Fairbanks	8,973	10,113	7,542	6,632e	3,863	4,403	3,196	2,810e
95 Stanford University	8,915	9,780	9,841	9,593	6,587	7,704	7,707	7,377
96 SUNY Hlth Sci Ctr - Brkln	8,901	10,750	8,825	7,900	6,009	6,850	4,967	4,624
97 Univ of Hawaii-Manoa	8,715	7,332	6,714	6,351	3,671	3,131	3,028	3,153
98 Univ of South Alabama	8,320	7,711	7,133e	6,326	5,019	4,993	4,789	4,133
99 Clemson University	8,184	9,091	7,679	7,283	3,470	1,972	1,794	2,190
100 Montana State University	8,078	6,173	4,251	3,575	2,677	2,889	1,982	1,849
Total, 1st 100 insts.	2,671,248	2,482,256	2,298,734	2,109,550	1,716,081	1,612,901	1,521,261	1,418,640
Total, all other sampled insts.	366,614	348,064	314,705	287,881	225,039	216,480	200,553	183,006
Estimated total non-sampled insts.	18,858	24,262	24,627	0	9,784	11,715	10,602	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-62. Total and federally financed R&D expenditures in the medical sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	4,569,054	4,181,617	3,827,673	3,377,752	2,830,739	2,664,825	2,501,041	2,212,997
1 Univ of Cal San Francisco	268,700	238,278	219,446	193,289	190,936	175,257	159,906	137,747
2 Univ of Cal Los Angeles	136,264	133,412	124,481	108,769	90,024	89,654	86,738	77,885
3 Stanford University	128,595	125,002	118,151	106,870	95,793	103,145	96,317	87,190
4 Johns Hopkins Univ	127,022	117,366	101,414	86,196	105,005	95,721	83,463	69,812
5 University of Michigan	118,472	93,805	80,901	67,275	69,814	58,116	52,164	46,292
6 Univ of Cal San Diego	117,698	99,909	88,374	80,263	94,433	80,358	72,544	67,178
7 Univ of Pennsylvania	111,181	100,918	89,399	82,970	79,448	70,201	63,136	57,724
8 University of Minnesota	103,342	99,238	90,446	83,118	48,882	49,199	50,682	44,829
9 Univ of Wis-Madison	101,919	95,903	89,148	81,747	54,753	53,593	50,377	46,371
10 Duke University	96,758	77,747	72,150	61,542	62,870	56,314	52,698	45,785
Total, 1st 10 insts.	1,309,951	1,181,578	1,073,910	952,039	891,958	831,558	768,025	680,813
11 Yale University	96,542	87,132	78,702	70,787	73,061	67,682	62,127	56,524
12 Baylor Col of Medicine	83,946	86,406	76,733	69,452	31,165	31,790	40,909	34,063
13 University of Washington	82,930	77,129	69,679	58,163	66,007	62,369	56,405	47,678
14 Univ of Southern Cal	82,874	79,666	79,660	75,528	54,149	54,318	54,406	52,004
15 Washington University	82,399	74,667	64,567	58,905	58,048	52,455	49,827	45,652
16 University of Pittsburgh	79,439	67,811	63,720	55,823	64,506	55,861	50,766	43,763
17 Cornell University	79,189	75,576	71,381	63,148	50,727	51,396	46,499	40,226
18 Univ Alabama Birmingham	72,103	71,806	69,179	57,677	51,306	49,556	47,029	42,607
19 Univ of MD Balt Prof Sch	71,849	66,951	60,683	55,030	34,946	31,073	28,776	26,482
20 Harvard University	71,817	67,571	61,399	53,628	47,310	44,351	36,502	32,270
Total, 1st 20 insts.	2,113,039	1,936,293	1,769,613	1,570,180	1,423,183	1,332,409	1,241,271	1,102,082
21 Columbia Univ Main Div	69,554	65,322	62,963	57,214	56,774	55,816	53,182	49,071
22 University of Iowa	62,116	58,626	55,552	49,106	42,729	42,321	41,372	36,050
23 UT MD Anderson Cancer Ctr	57,861	45,766	42,767	38,708	13,341	12,489	12,814	12,924
24 Univ of Cal Davis	56,092	55,833	49,241	41,314	37,211	38,496	34,522	28,464
25 University of Miami	55,240	51,930	51,234	37,333	34,790	33,770	32,082	24,011
26 UT SW Medical Ctr-Dallas	53,668	49,445	47,654	42,617	29,870	29,379	28,677	27,139
27 University of Rochester	53,386	51,965	46,758	43,594	40,649	40,893	36,567	33,851
28 CUNY Mt Sinai Sch of Med	50,418	46,818	42,738	37,970	29,063	29,741	26,188	25,039
29 Emory University	50,005	44,527	31,253	29,123	26,090	21,868	18,264	17,119
30 Univ of Med & Dent of N J	49,765	43,158	41,325	30,235	27,552	23,160	18,652	13,264
Total, 1st 30 insts.	2,671,144	2,449,683	2,241,098	1,977,394	1,761,252	1,660,342	1,543,591	1,369,014
31 University of Chicago	49,519	49,984	45,718	40,535	38,487	38,733	35,651	31,300
32 Boston University	49,305	50,688	47,108	44,998	40,693	42,592	41,372	39,457
33 Univ of NC at Chapel Hill	47,137	41,524	40,375	34,835	38,443	34,031	33,102	28,344
34 Univ. of Colorado	45,200	45,307	41,215	35,188	33,502	31,875	28,778	22,832
35 Yeshiva University	45,096	43,664	38,733	39,193	35,273	33,835	30,277	30,588
36 Wayne State University	44,086	39,574	37,980	31,145	22,716	21,001	20,658	16,935
37 Case Western Reserve Univ	43,933	38,510e	36,432	28,863	35,763	32,476	31,805	24,523
38 Indiana University	43,325	38,275	33,343	28,042	23,270	21,641	22,313	17,773
39 Univ of South Florida	42,661	39,271	29,762	31,037	6,983	5,889	5,218	3,871
40 Wake Forest University	42,316	38,015	35,694	29,375	32,318	29,289	27,807	22,290
Total, 1st 40 insts.	3,123,722	2,874,495	2,627,458	2,320,605	2,068,700	1,951,704	1,820,572	1,606,927
41 New York University	41,624	41,404	35,382	33,471	30,139	29,109	26,760	24,444
42 Unif Serv Univ of Hlth Sc	41,506	30,837	21,855	10,357	7,256	6,045	7,499	6,979
43 Virginia Commonwlth Univ	39,516	37,074	31,402	24,765	26,536	24,250	20,539	17,213
44 Univ of Ill Chicago	39,371	34,917	35,316	32,492	18,314	18,063	19,222	18,056
45 Northwestern University	39,288	35,483	32,282	30,005	13,538	13,168	12,397	12,885
46 University of Connecticut	37,813	37,888	35,250	27,432	18,522	17,144	18,197	16,122
47 Georgetown University	37,168	29,008	32,467	26,138	23,181	19,320	20,841	16,660
48 University of Utah	37,118	35,543	32,867	31,916	26,673	26,668	26,660	25,426
49 University of Arizona	36,765	32,656	33,174	31,133	21,360	19,373	20,216	17,623
50 U Tex Hlth Sci Ctr Houstn	34 705	26,703	25,826	24,574	20,824	15,860	15,066	14,581
Total, 1st 50 insts.	3,508,596	3,216,008	2,943,279	2,592,888	2,275,043	2,140,704	2,007,969	1,776,916

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-62. Total and federally financed R&D expenditures in the medical sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 Dartmouth College	34,597	32,318e	27,702	24,232	26,817	21,988i	19,862	18,417
52 U Tex Hlth Sci Ctr S Anto	34,140	28,910	26,163	24,579	20,281	17,373	17,291	16,219
53 SUNY at Buffalo	32,501	27,757	28,506	22,871	20,685	16,631	19,227	15,792
54 University of Florida	31,984	31,824	29,211	24,312	15,241	15,185	14,549	13,903
55 Univ of Massachusetts	30,146	21,047	28,120	20,454	17,641	11,652	11,859	10,037
56 University of Virginia	29,919	30,327	24,044	22,258	16,470	15,724	13,298	12,206
57 Ohio State University	29,584	24,543	22,631	20,377	16,023	14,620	13,439	9,866
58 Vanderbilt University	28,872	27,906	25,415	22,880	26,485	25,835	22,946	17,195
59 Medical College of Wis	28,717	23,404	22,512	21,685	17,794	14,598	13,804	10,407
60 Oregon Hlth Sciences Univ	27,857i	27,937i	23,493	20,728	17,868i	16,843i	14,938	12,062
Total, 1st 60 insts.	3,816,913	3,491,981	3,201,076	2,817,264	2,470,348	2,311,153	2,169,182	1,913,020
61 Tulane University	27,150	20,413	16,991	15,202	14,047	9,663	7,531	6,922
62 Univ of Cal Irvine	25,930	38,456	31,244	27,530	9,019	22,595	19,532	17,341
63 Univ of Cal Berkeley	25,889	13,809	12,459	9,157	7,479	7,855	7,653	7,055
64 SUNY Hlth Sci Ctr - Syrcs	25,351	24,623	21,338	16,673	2,662	2,906	3,044	2,731
65 University of Kentucky	25,025	21,254	18,590	19,476	15,280	12,404	11,458	10,770
66 SUNY Hlth Sci Ctr - Brkln	23,923	12,123	11,698	10,474	11,940	7,724	6,585	6,130
67 University of Cincinnati	23,169	22,568	23,029	19,831	12,076	12,672	12,875	11,745
68 Thomas Jefferson Univ	20,636	17,147	17,961	15,191	11,860	10,167	10,579	10,456
69 U Tex Med Brnch Galveston	20,511	17,868	18,305	15,600	9,759	10,636	11,241	9,513
70 University of Oklahoma	20,205	16,173	13,488	11,801	5,523	5,238	3,830	3,508
Total, 1st 70 insts.	4,054,702	3,696,415	3,386,179	2,978,199	2,569,993	2,413,013	2,263,510	1,999,191
71 Univ. Of Tennessee System	19,715	20,435	20,563	18,566	10,394	11,495	11,747	10,226
72 U of VT & State Agr Coll	19,389	18,113	15,848	13,648	13,487	12,373	11,015	9,716
73 Rush University	19,323	15,393	16,233	13,822	3,300	3,125	4,158	3,243
74 SUNY at Stony Brook	18,363	17,233	16,364	13,582	11,050	10,974	10,223	9,760
75 Univ of Missouri Columbia	17,618	14,079	10,818	10,499	6,087	4,557	3,824	3,480
76 Med Univ of S. Carolina	15,920	14,884	13,123	11,038	8,106	6,459	5,990	5,407
77 Louisiana State Univ Sys	15,908	22,365	16,139	16,318	9,183	14,732	10,836	11,476
78 Pennsylvania State Univ	15,463	13,799	11,335	10,300	11,389	9,790	8,098	7,333
79 University of Georgia	15,039	14,660	13,212	11,116	2,683	2,534	2,588	2,124
80 Temple University	15,021	13,618	14,054	13,560	7,273	5,999	7,366	6,845
Total, 1st 80 insts.	4,226,461	3,860,994	3,533,868	3,110,648	2,652,945	2,495,051	2,339,355	2,068,801
81 Brown University	13,650	13,618	12,798	11,012	10,243	10,749	9,966	9,456
82 Loyola Univ - Chicago	12,917	4,210	4,044	2,914	8,540	1,586	1,546	1,556
83 The Medical Col of Penna	12,494	10,025	8,657	5,707	6,289	4,722	4,071	2,985
84 University of Kansas	12,433	10,865	7,596	8,140	4,523	4,079	3,631	3,446
85 George Washington Univ	12,318	13,673	13,628	12,242	9,676	11,127	11,237	10,179e
86 U of Neb Med Ctr at Omaha	9,983	6,058	5,050	4,074	3,835	2,495	1,700	1,487
87 Univ of South Carolina	9,744	9,934	8,948	7,236	5,152	5,471	4,957	4,191
88 University of New Mexico	9,640	7,045	5,789	6,102	4,556	3,587	3,107	3,281
89 St Louis University	9,424	7,712	5,981	3,975	7,453	5,768	4,302	2,939
90 U of Arkansas Med Sci Cam	9,405	8,219e	7,484	6,766	4,887	3,354	2,580	3,257
Total, 1st 90 insts.	4,338,469	3,952,353	3,613,843	3,178,816	2,718,099	2,547,969	2,386,452	2,111,578
91 Rutgers the St Univ of NJ	8,446	7,708	6,238	4,134	3,998	2,842	2,399	1,197
92 Creighton University	8,324	8,929	7,934	7,647	2,580	2,405	2,386	1,828
93 Purdue University	8,115	9,354	7,894	5,924	5,749	5,808	4,825	3,586
94 University of Mississippi	8,102	8,102	7,943	7,819	3,763	4,010	3,972	3,844
95 Michigan State University	7,976i	7,602	7,933	7,301	3,600i	3,399	3,018	2,429
96 Hahnemann University	7,569i	7,548	6,171	4,197	3,480i	3,570	3,603	3,158
97 West Virginia University	7,448	4,723	6,804	4,736	2,973	1,763	1,979	1,665
98 Chas R Drew U of Med & Sc	7,043	4,662i	2,281	2,826	5,311	3,796i	2,281	2,826
99 Univ of P R-Med Sci Cmpus	6,310	6,293	6,528	5,517	3,974	5,366	5,235	4,218
100 Tufts University	6,185	5,625	5,582	6,047e	4,542	4,039	3,866	4,105e
Total, 1st 100 insts.	4,413,987	4,022,899	3,679,151	3,234,964	2,758,069	2,584,967	2,420,016	2,140,434
Total, all other sampled insts.	153,867	158,243	146,533	142,788	72,198	79,788	79,243	72,563
Estimated total non-sampled insts.	1,200	475	1,989	0	472	70	1,782	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-63. Total and federally financed R&D expenditures in psychology at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	293,440	258,182	237,141	213,320	194,267	168,347	155,802	140,358
1 Univ of Southern Cal	9,776	7,527	5,098	3,984	6,753	5,227	3,659	2,748
2 Univ of Wis-Madison	9,469	8,553	8,843	7,653	7,452	6,876	7,336	6,419
3 University of Minnesota	7,622	6,042	6,283	5,222	4,992	3,962	3,953	3,754
4 Mass Inst of Technology	7,481	7,856	7,573	8,609	6,720	7,231	6,309	7,353
5 Univ of Cal Los Angeles	7,142	6,681	6,694	8,403	5,199	4,782	5,369	7,035
6 University of Michigan	6,960	5,388	5,601	6,818	3,391	2,996	2,948	3,814
7 Univ of Cal Berkeley	6,548	6,414	5,933	5,607	4,195	3,685	3,317	3,121
8 University of Ill Urbana	5,970	6,169	5,420	5,091	3,557	3,571	3,381	3,078
9 Univ. of Colorado	5,948	5,178	4,958	3,767	3,999	3,549	3,438	2,455
10 Rutgers the St Univ of NJ	5,894	6,198	5,202	4,708	2,522	2,593	2,285	2,244
Total, 1st 10 insts.	72,810	66,006	61,605	59,862	48,780	44,472	41,995	42,021
11 Pennsylvania State Univ	5,768	4,565	2,756	2,545	3,319	2,040	1,062	1,137
12 University of Washington	5,256	5,097	4,553	3,324	4,543	4,664	4,218	3,088
13 Princeton University	5,238	5,015	4,528	4,408	2,518	2,387	2,377	2,176
14 University of Rochester	5,062	4,731	4,767	5,062	2,457	2,319	2,688	3,133
15 University of Connecticut	4,539	2,912	3,017	2,419	2,406	830	1,042	830
16 Carnegie-Mellon Univ	4,232	4,458	4,007	4,443	3,166	3,403	3,324	3,911
17 Yale University	3,710	3,181	2,952	2,354	1,705	1,686	1,292	1,173
18 SUNY at Buffalo	3,681	2,794	2,314	2,066	1,335	912	864	816
19 Stanford University	3,583	3,504	4,081	3,834	2,703	2,900	3,024	2,931
20 Indiana University	3,566	3,089	2,795	2,658	2,605	2,174	2,281	2,192
Total, 1st 20 insts.	117,445	105,352	97,375	92,975	75,537	67,787	64,167	63,408
21 University of Georgia	3,526	3,656	3,668	2,857	1,090	1,137	1,419	910
22 Cornell University	3,514	2,909	2,875	2,704	1,558	1,106	1,234	1,193
23 University of Oklahoma	3,501	359	384	344	1,502	104	142	148
24 New York University	3,458	3,605	3,703	3,205	3,078	3,316	3,591	3,014
25 Univ of MD College Park	3,339	4,994	4,773	4,148	1,125	1,194	1,380	1,170
26 Univ of Massachusetts	3,209	3,406	3,008	2,704	2,548	2,463	2,336	2,080
27 Michigan State University	3,081 i	2,930	1,739	2,063	1,851 i	1,748	865	813
28 Univ of Cal San Diego	2,965	2,617	2,410	2,104	2,163	1,822	1,619	1,368
29 SUNY at Albany	2,947	2,797	2,894	2,696	2,128	2,321	2,471	2,121
30 Temple University	2,874	1,242	912	210	1,749	565	439	56
Total, 1st 30 insts.	149,859	133,867	123,741	116,010	94,329	83,563	79,663	76,281
31 Memphis State University	2,716	3,139	3,029	2,505	665	974	1,064	573
32 Univ of Cal Santa Barbara	2,690	2,789	2,936	2,719	1,931	2,075	2,180	2,002
33 Univ of Rhode Island	2,646	943	626 i	636	2,232	806	482 i	505
34 Univ of Texas at Austin	2,608	2,259	2,204	1,864	1,987	1,678	1,690	1,495
35 San Jose State University	2,594	1,910	883	1,250	2,490	1,813	871	1,250
36 Arizona State University	2,556	2,138	1,727	1,253	1,780	1,552	1,244	908
37 University of Virginia	2,534	2,406	1,866	1,704	2,207	2,064	1,535	1,353
38 Colorado State University	2,476	1,607	1,243	824	2,123	1,556	1,114	742
39 Florida State University	2,361	3,166	3,000	2,606	1,301	1,449	1,328	1,125
40 University of Denver	2,319	1,043	1,077	1,310	1,581 i	750	896	1,152
Total, 1st 40 insts.	175,359	155,267	142,332	132,683	112,626	98,280	92,067	87,386
41 Harvard University	2,302	2,064	2,123	1,689	1,652	1,299	1,437	1,325
42 Georgia State University	2,267	1,626	1,005	914	865	517	354	284
43 University of Arizona	2,263	626	301	383	1,253	469	180	247
44 University of Pittsburgh	2,236	1,583	1,151	626	1,811	1,456	1,017	586
45 SUNY at Binghamton	2,225	2,186	1,714	1,389	766	782	663	446
46 San Diego State Univ	2,181	1,349	813	783	2,046	1,087	382	271
47 U of Houston	2,167	1,584	1,347	954	1,620	907	692	356
48 Duke University	2,131	1,558	1,328	1,330	2,074	1,471	1,245	1,124
49 University of Oregon	2,043	1,552	1,405	1,101	1,380	1,274	1,153	942
50 Rush University	2,018	921	528	534	836	691	423	396
Total, 1st 50 insts.	197,192	170,316	154,045	142,386	126,929	108,233	99,613	93,343

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-63. Total and fedorally financed R&D expenditures in psychology at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 Univ of South Carolina	1,898	2,261	2,119	1,320	1,252	1,123	994	870
52 Vanderbilt University	1,898	1,744	1,507	1,521	1,489	1,433	1,040	1,128
53 SUNY at Stony Brook	1,793	1,050	1,001	992	1,428	849	511	685
54 Univ of South Florida	1,783	1,358	1,438	1,173	545	655	892	810
55 Texas Christian Univ	1,731	854	194	90	1,727	831	177	78
56 University of Chicago	1,725	1,008	967	1,085	960	704	713	771
57 Columbia Univ Main Div	1,653	1,261	1,338	1,086	1,536	1,149	1,204	965
58 Univ of Pennsylvania	1,516	1,546	1,570	1,306	1,467	1,357	1,570	1,306
59 Brown University	1,502	1,550	1,136	1,232	1,123	1,301	994	1,153
60 University of Florida	1,493	2,114	2,674	1,838	834	995	1,373	1,199
Total, 1st 60 insts.	214,184	185,062	167,989	154,029	139,290	118,630	109,081	102,308
61 Utah State University	1,460	497	254	390	1,154	307	118	250
62 Hahnemann University	1,456i	1,461	730	329	816i	838	331	176
63 University of Kansas	1,421	1,426	1,086	999	745	764	671	645
64 Purdue University	1,394	1,521	1,727	1,809	978	1,183	1,252	1,351
65 Oregon Hlth Sciences Univ	1,389i	1,350i	1,168	655	1,153i	1,087i	965	572
66 Brandeis University	1,345	1,224	1,283	1,309	1,178	1,086	1,090	1,262
67 Georgia Institute of Tech	1,281	1,696	2,891	2,825	735	956	1,623	1,686
68 VA Polytech Inst & St U	1,253	1,209	705	964	730	664	366	224
69 Univ of NC at Chapel Hill	1,245	1,013	808	648	1,134	939	722	566
70 Johns Hopkins Univ	1,243	1,368	1,193	1,575	948	1,162	1,035	1,246
Total, 1st 70 insts.	227,671	197,827	179,834	165,532	148,861	127,616	117,254	110,286
71 Univ of Missouri Columbia	1,211	1,449	1,461	1,188	754	492	507	487
72 Northwestern University	1,191	981	792	994	916	767	708	869
73 Wayne State University	1,189	716	915	789	822	465	624	583
74 University of Iowa	1,141	1,009	1,269	1,634	707	542	583	761
75 U of VT & State Agr Coll	1,137	1,246	1,381	674	805	1,002	1,048	412
76 University of Miami	1,102	1,419	1,245	1,159	1,029	1,269	1,160	965
77 Florida Atlantic Univ	1,049	565	493	424	977	528	393	289
78 University of Utah	1,035	614	687	629	940	488	424	450
79 Univ of Ill Chicago	977	275	418	303	729	163	219	108
80 Kent State University	932	234	130	268	688	170	97	194
Total, 1st 80 insts.	238,635	206,335	188,625	173,594	157,228	133,502	123,017	115,404
81 CUNY Hunter College	903	845	997	771	733	744	780	539
82 University of New Mexico	897	552	782	631	730	418	678	531
83 The University of Alabama	894	831	651	723	144	279	288	366
84 University of Dayton	885	2,453	3,075	1,645	872	2,446	2,562	1,364
85 Louisiana State Univ Sys	876	795	1,141	1,172	594	390	238	336
86 Univ of Cal Davis	800	522	163	290	720	434	145	251
87 Tufts University	781	854	774	1,978	723	749	620	1,254
88 Univ of Cal Santa Cruz	762	464	167	176	640	401	146	135
89 Texas A & M University	756	686	860	807	482	310	535	628
90 Univ Alabama Birmingham	753	574	638	699	536	378	502	643
Total, 1st 90 insts.	246,942	214,911	197,873	182,486	163,402	140,051	129,511	121,451
91 Washington University	735	1,036	754	672	493	704	543	486
92 Iowa St U of Sci & Tech	728	541	617	883	146	10	124	337
93 Emory University	720	520	254	359	587	391	210	298
94 Northern Arizona Univ	716	650	458	469	619	612	448	469
95 Northeastern University	701	618	618	773	448i	460	525	657
96 Cal Sch Prof Psych-Fresno	661	1,382	1,922	1,015	208	985	1,566	940
97 Southern Ill U-Carbondale	620	503	202	215	373	266	54	52
98 Univ of Central Florida	619	205	19	32	344	112	12	9
99 University of Delaware	606	592	921	927	486	385	778	730
100 Univ of N C at Greensboro	603	383	269	241	537	306	247	231
Total, 1st 100 insts.	253,651	221,341	203,907	188,072	167,643	144,282	134,018	125,660
Total, all other sampled insts.	27,639	27,531	26,518	25,248	16,632	16,557	16,507	14,698
Estimated total non-sampled insts.	12,150	9,310	6,716	0	9,992	7,508	5,277	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-64. R&D expenditures in the social sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Social sciences total				1991 subfields			
	1991	1990	1989	1988	Economics	Political science	Sociology	Other
Total, all institutions	745,987	702,059	637,174	552,605	210,296	121,464	157,806	256,422
1 University of Michigan	41,259	39,203	36,860	31,552	9,633	7,184	12,029	12,413
2 Harvard University	39,711	39,668	40,675	36,429	17,276	17,534	459	4,442
3 Univ of Wis-Madison	22,608	22,661	19,571	19,948	7,788	1,645	5,204	7,971
4 Univ of Cal Berkeley	19,894	19,550	16,595	15,195	99	8,608	3,269	7,918
5 University of Georgia	19,821	18,538	17,580	15,108	8,811	1,193	1,491	8,326
6 Univ of Texas at Austin	19,674	15,335	13,882	9,977	4,985	6,777	5,300	2,612
7 Univ of Cal Los Angeles	16,442	15,530	13,559	15,213	431	301	752	14,958
8 Ohio State University	15,160	12,383	13,197	7,882	4,797	1,156	843	8,364
9 Rutgers the St Univ of NJ	14,438	13,005	11,285	9,379	1,202	6,446	3,533	3,257
10 Univ of Pennsylvania	13,484	14,956	16,267	10,207	4,929	770	2,061	5,724
Total, 1st 10 insts.	222,491	210,829	199,471	170,890	59,951	51,614	34,941	75,985
11 Brandeis University	12,377	11,061	11,456	9,100	217	28	11,785	347
12 University of Minnesota	12,188	11,245	8,455	7,332	5,502	3,497	1,002	2,187
13 Cornell University	11,865	12,049	10,414	9,724	4,314	57	2,635	4,859
14 Univ of NC at Chapel Hill	11,290	10,193	10,316	9,231	38	27	2,812	8,413
15 Pennsylvania State Univ	11,274	8,943	7,766	6,847	3,920	1,365	3,159	2,830
16 University of Ill Urbana	10,962	10,433	7,332	6,992	4,439	2,337	239	3,947
17 Johns Hopkins Univ	10,425	10,767	10,258	9,141	3,385	65	5,056	1,919
18 Temple University	9,768	7,688	6,675	7,468	152	569	9,045	2
19 Princeton University	9,562	9,704	8,242	6,693	1,544	6,080	1,147	791
20 Texas A & M University	8,852	9,329	10,912	11,044	6,439	37	1,710	666
Total, 1st 20 insts.	331,054	312,241	291,297	254,462	89,901	65,676	73,531	101,946
21 Iowa St U of Sci & Tech	8,619	6,289	5,564	3,478	3,051	295	5,273	0
22 Georgia Institute of Tech	8,491	5,246	4,105	1,840	8,246	51	127	67
23 Washington State Univ	8,293	8,237	7,581	5,262	5,080	112	2,524	577
24 University of Arizona	8,271	7,944	7,394	7,366	3,825	93	1,387	2,966
25 Oklahoma State University	7,968	6,866	6,076	8,219	5,350	90	1,076	1,452
26 Tulane University	7,527	3,840	589	829	973	7	1,379	5,168
27 Arizona State University	7,489	7,171	4,743	3,078	814	569	299	5,807
28 Michigan State University	6,948i	6,622	5,105	4,876	4,962i	158i	29i	1,799i
29 University of Washington	6,942	4,921	4,286	3,573	57	2,071	213	4,601
30 Univ of MD College Park	6,549	16,641	13,900	13,060	2,196	311	402	3,640
Total, 1st 30 insts.	408,151	386,018	350,640	306,043	124,455	69,433	86,240	128,023
31 Univ of Missouri Columbia	6,481	5,249	4,230	3,894	3,898	180	1,705	698
32 Duke University	6,392	7,048	8,310	6,575	1,708	1,919	1,763	1,002
33 Colorado State University	6,388	6,092	4,687	3,767	939	665	534	4,250
34 University of Oklahoma	5,913	4,995	3,765	3,215	1,414	671	1,542	2,286
35 Purdue University	5,883	6,607	6,553	6,479	4,658	54	700	471
36 Clemson University	5,763	4,888	4,584	3,382	2,973	1,255	62	1,473
37 Univ of South Carolina	5,672	5,343	5,638	4,392	1,422	1,487	1,111	1,672
38 Florida State University	5,661	6,785	5,939	5,302	551	544	1,632	2,934
39 University of New Mexico	5,443	2,001	1,484	1,433	256	332	568	4,287
40 Columbia Univ Main Div	5,381	5,117	6,569	3,557	1,045	748	3,301	287
Total, 1st 40 insts.	467,128	440,143	402,399	348,039	143,319	77,268	99,158	147,383
41 Louisiana State Univ Sys	5,083	4,036	5,757	5,510	3,216	646	309	912
42 New York University	5,024	4,532	5,334	3,566	1,171	2,635	230	988
43 VA Polytech Inst & St U	4,956	6,682	4,588	3,940	2,031	143	230	2,552
44 Univ of Cal Santa Barbara	4,945	4,816	2,942	2,972	1,432	114	247	3,152
45 Univ of Massachusetts	4,908	4,680	3,441	2,996	110	1,179	652	2,967
46 University of Virginia	4,850	4,535	2,660	2,487	321	4,026	399	104
47 Univ of Southern Cal	4,599	3,399	2,926	2,094	198	1,100	2,832	469
48 University of Florida	4,507	3,300	2,188	2,281	714	329	916	2,548
49 University of Connecticut	4,471	3,025	3,199	2,894	229	103	400	3,739
50 Univ. Of Tennessee System	4,366	4,658	4,729	3,855	2,641	1,141	536	48
Total, 1st 50 insts.	514,837	483,806	440,163	380,634	155,382	88,684	105,909	164,862

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-64. R&D expenditures in the social sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Social sciences total				1991 subfields			
	1991	1990	1989	1988	Economics	Political science	Sociology	Other
51 Cleveland State Univ	4,310	3,893	3,072	3,160	0	28	1,405	2,877
52 Carnegie-Mellon Univ	4,276	3,412	3,074	2,554	1,725	998	1,553	0
53 University of Delaware	4,220	2,705	1,544	1,473	58	7	1,933	2,222
54 SUNY at Buffalo	4,168	4,421	2,849	786	3	85	530	3,550
55 University of Iowa	4,139	2,893	2,404	1,930	518	570	1,408	1,643
56 Univ. of Colorado	4,050	4,208	2,629	2,741	897	123	1,996	1,034
57 Stanford University	3,959	2,268	2,679	2,442	794	128	279	2,758
58 Indiana University	3,955	2,943	3,075	2,754	1,006	605	661	1,683
59 Univ of Cal Irvine	3,923	3,666	3,556	3,128	1	1,856	903	1,163
60 Mississippi State Univ	3,736	3,350	2,906	2,757	1,656	332	667	1,081
Total, 1st 60 insts.	555,573	517,565	467,951	404,359	162,040	93,416	117,244	182,873
61 University of Pittsburgh	3,700	4,246	6,006	4,128	522	1,279	229	1,670
62 SUNY at Albany	3,696	4,211	3,966	3,038	11	172	1,304	2,209
63 Syracuse University	3,634	3,183	2,703	2,129	294	860	394	2,086
64 Univ of Ill Chicago	3,496	3,309	2,292	2,062	150	4	44	3,298
65 US Naval Postgrad School	3,490	2,748	3,031	2,860	847	692	1,951	0
66 Mass Inst of Technology	3,461	4,645	5,109	4,857	1,243	686	0	1,532
67 N C State Univ at Raleigh	3,422	3,790	2,377	2,638	2,737	37	648	0
68 Univ of Wis-Milwaukee	3,392	2,472	2,632	2,096	248	117	304	2,723
69 Northern Illinois Univ	3,379	2,769i	2,286	2,148	221	1,970	360	828
70 Univ of Hawaii-Manoa	3,379	3,157	2,764	2,427	809	21	166	2,383
Total, 1st 70 insts.	590,622	552,095	501,117	432,742	169,122	99,254	122,644	199,602
71 Texas Tech University	3,299	3,999	3,615	4,055	997	333	1,649	320
72 Georgetown University	3,251	3,389	4,824	4,311	64	38	1,969	1,180
73 University of Chicago	3,184	4,079	3,549	3,275	176	665	437	1,906
74 Vanderbilt University	3,083	1,561	1,182	1,543	15	2,819	55	194
75 Yale University	2,903	2,660	2,801	2,955	1,488	31	133	1,251
76 Univ of Nebraska-Lincoln	2,808	2,774	2,651	1,291	1,757	204	398	449
77 Emory University	2,749	2,465	1,922	1,234	0	2,418	21	310
78 Oregon State University	2,748	2,300	2,299	2,152	1,667	0	993	88
79 The University of Alabama	2,620	2,762	2,538	1,932	1,461	319	6	834
80 Univ of Ark Fayetteville	2,569	2,062	1,721	1,492	54	297	59	2,159
Total, 1st 80 insts.	619,836	580,146	528,219	456,982	176,801	106,378	128,364	208,293
81 University of Miami	2,451	1,808	1,531	490	75	0	824	1,552
82 Case Western Reserve Univ	2,397	3,188e	2,595	2,854	721	0	222	1,454
83 Univ of Alaska Fairbanks	2,397	2,985	2,106	1,852e	69	0	1,410	918
84 SUNY at Stony Brook	2,308	3,197	2,594	2,075	782	358	379	789
85 Univ of Rhode Island	2,269	1,553	609i	579	1,813	0	11	445
86 Univ of Cal San Diego	2,168	2,110	1,770	1,732	431	724	70	943
87 Univ of Cal Davis	2,143	1,924	1,589	1,538	85	1,131	198	729
88 Wayne State University	2,042	1,597	1,067	1,059	290	57	246	1,449
89 Univ of New Hampshire	1,991	1,123	2,084	938	22	0	1,076	893
90 Desert Research Institute	1,977	1,680	1,643	1,372	0	0	0	1,977
Total, 1st 90 insts.	641,979	601,311	545,807	471,471	181,089	108,648	132,800	219,442
91 Western Michigan Univ	1,886	1,152	637i	121	9	1,275	558	44
92 Memphis State University	1,875	1,756	1,177	896	686	5	883	301
93 SUNY at Binghamton	1,866	2,856	2,322	2,176	183	220	715	748
94 University of Idaho	1,865	1,848	1,549	1,571	1,467	36	362	0
95 George Mason University	1,820	2,926	982	807	1,090	551	179	0
96 American University	1,803	1,676	1,119	1,093	351	832	5	615
97 Univ of Maine Orono	1,622	1,323	905	1,469	1,387	7	15	213
98 Univ of Nevada - Reno	1,603	1,189	1,061	900	581	60	886	76
99 Georgia State University	1,597	1,292	1,274	955	903	62	601	31
100 West Virginia University	1,586	1,170	707	722	1,274	73	90	149
Total, 1st 100 insts.	659,502	618,499	557,540	482,181	189,020	111,769	137,094	221,619
Total, all other sampled insts.	73,003	73,202	69,543	70,424	17,971	9,021	17,632	28,379
Estimated total non-sampled insts.	13,482	10,358	10,091	0	3,305	674	3,080	6,424

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-65. Federally financed R&D expenditures in the social sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Social sciences total				1991 subfields			
	1991	1990	1989	1988	Economics	Political science	Sociology	Other
Total, all institutions	247,188	224,702	211,240	188,529	58,800	28,800	71,614	87,973
1 University of Michigan	13,963	12,745	15,829	13,050	5,130	2,560	4,318	1,955
2 Ohio State University	11,190	8,913	8,857	5,066	2,426	279	484	8,001
3 Harvard University	10,922	12,316	14,527	12,956	1,887	6,284	217	2,534
4 Univ of Wis-Madison	10,684	10,311	9,899	11,476	2,869	107	3,436	4,272
5 Univ of Cal Berkeley	6,485	6,224	5,518	5,584	51	1,195	1,312	3,927
6 Univ of NC at Chapel Hill	6,406	5,721	5,794	4,945	38	0	2,153	4,215
7 Rutgers the St Univ of NJ	5,776	4,437	3,334	3,408	144	1,944	1,585	2,103
8 Johns Hopkins Univ	5,409	5,274	6,036	5,571	560	38	4,269	542
9 Brandeis University	5,128	3,870	3,859	3,685	85	13	4,883	147
10 Temple University	4,987	4,597	2,568	881	0	65	4,922	0
Total, 1st 10 insts.	80,950	74,408	76,221	66,622	13,190	12,485	27,579	27,696
11 Georgia Institute of Tech	4,876	2,959	2,304	932	4,795	29	73	39
12 Univ of Pennsylvania	4,324	3,287	4,052	4,688	1,566	370	425	1,963
13 University of Minnesota	4,204	3,877	3,025	2,227	1,791	683	660	1,070
14 Pennsylvania State Univ	4,194	2,996	2,091	2,177	1,407	71	1,137	1,579
15 Univ of MD College Park	4,030	2,574	1,479	1,355	1,361	135	252	2,282
16 University of Washington	3,844	2,919	2,857	2,432	37	87	109	3,611
17 Univ of Texas at Austin	3,691	3,269	3,467	1,712	901	1,064	1,426	300
18 Colorado State University	3,598	3,074	2,190	1,812	672	295	450	2,181
19 US Naval Postgrad School	3,490	2,748	3,031	2,860	847	692	1,951	0
20 Columbia Univ Main Div	3,477	2,534	4,134	1,512	130	151	2,911	285
Total, 1st 20 insts.	120,678	104,645	104,851	88,329	26,637	16,062	36,973	41,006
21 Michigan State University	3,270i	3,089	2,027	2,134	2,963i	83i	13i	211i
22 Univ of Cal Santa Barbara	3,177	2,895	1,279	1,255	351	0	158	2,668
23 Tulane University	3,004	1,835	287	216	0	0	987	2,017
24 University of Ill Urbana	2,987	2,615	2,414	2,169	1,012	361	159	1,435
25 Duke University	2,883	3,876	4,531	3,778	591	118	1,543	631
26 SUNY at Albany	2,665	3,075	2,782	2,005	0	0	706	1,959
27 Iowa St U of Sci & Tech	2,647	1,792	1,693	409	886	0	1,761	0
28 Univ. of Colorado	2,638	2,672	1,513	1,899	499	44	1,515	580
29 University of Oklahoma	2,637	576	488	472	622	404	1,093	518
30 Univ of Cal Los Angeles	2,434	2,605	2,563	2,427	138	36	214	2,046
Total, 1st 30 insts.	149,000	129,675	124,428	105,093	33,699	17,108	45,122	53,071
31 Georgetown University	2,188	2,372	3,365	2,847	1	0	1,257	930
32 Vanderbilt University	2,187	1,087	181	650	7	2,018	41	121
33 Univ of Southern Cal	2,158	1,479	1,217	985	159	57	1,752	190
34 Carnegie-Mellon Univ	2,121	1,863	1,754	1,711	779	401	941	0
35 Washington State Univ	2,075	1,942	1,994	1,803	1,624	0	177	274
36 University of Miami	2,047	1,394	1,208	367	75	0	788	1,184
37 University of Arizona	1,915	1,687	1,830	1,730	656	54	293	912
38 Cornell University	1,902	1,880	2,047	1,684	945	25	518	414
39 Arizona State University	1,863	2,076	487	468	3	0	54	1,806
40 Univ of Cal Irvine	1,737	1,229	1,321	1,217	0	787	286	664
Total, 1st 40 insts.	169,193	146,684	139,832	118,555	37,948	20,450	51,229	59,566
41 Univ of South Carolina	1,735	1,415	1,129	950	420	517	371	427
42 University of Delaware	1,672	867	477	308	22	6	1,644	0
43 Desert Research Institute	1,584	1,265	1,210	930	0	0	0	1,584
44 University of Georgia	1,564	1,504	1,705	1,743	787	0	182	595
45 Univ of Wis-Milwaukee	1,532	865	692	326	0	0	0	1,532
46 Texas A & M University	1,531	1,639	2,188	1,889	1,054	0	413	64
47 Univ of Rhode Island	1,508	1,012	179i	188	1,508	0	0	0
48 Univ of Missouri Columbia	1,445	1,402	1,073	859	1,081	0	114	250
49 VA Polytech Inst & St U	1,436	2,200	1,225	1,889	303	4	90	1,039
50 Purdue University	1,419	1,454	1,465	1,477	1,102	0	272	45
Total, 1st 50 insts.	184,619	160,307	151,175	129,114	44,225	20,977	54,315	65,102

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-65. Federally financed R&D expenditures in the social sciences at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Social sciences total				1991 subfields			
	1991	1990	1989	1988	Economics	Political science	Sociology	Other
51 Clemson University	1,400	1,419	1,303	1,562	1,057	150	0	193
52 Stanford University	1,394	838	1,485	1,254	532	83	212	567
53 American University	1,390	1,273	979	1,023	251	609	3	527
54 University of Pittsburgh	1,339	1,264	1,021	470	185	416	0	738
55 Northern Illinois Univ	1,323	1,161 i	1,053	755	0	1,021	94	208
56 University of Florida	1,303	663	443	514	11	60	568	664
57 Mass Inst of Technology	1,285	927	1,310	1,949	622	42	0	621
58 Texas Tech University	1,272	1,631	1,468	2,520	254	0	958	60
59 Univ. Of Tennessee System	1,258	1,491	1,367	1,258	785	317	143	13
60 University of Iowa	1,230	904	791	640	311	273	385	261
Total, 1st 60 insts.	197,813	171,878	162,395	141,059	48,233	23,948	56,678	68,954
61 Univ of New Hampshire	1,205	867	1,742	601	0	0	821	384
62 Mississippi State Univ	1,077	1,151	770	753	493	10	199	375
63 Princeton University	1,063	1,031	1,472	1,880	56	969	38	0
64 Cleveland State Univ	1,028	1,010	465	121	0	1	994	33
65 Univ of Massachusetts	973	1,242	1,044	714	27	63	205	678
66 University of New Mexico	961	785	1,032	1,057	78	44	256	583
67 SUNY at Stony Brook	926	1,521	958	1,160	236	175	47	468
68 N C State Univ at Raleigh	876	833	655	774	711	0	165	0
69 Portland State University	875	950	699	558	0	1	9	865
70 Washington University	856	145	211	175	0	153	670	33
Total, 1st 70 insts.	207,653	181,413	171,443	148,852	49,034	25,364	60,082	72,373
71 Oregon State University	855	693	706	690	237	0	589	29
72 Indiana University	823	997	879	815	84	163	211	365
73 University of Rochester	791	424	395	616	320	471	0	0
74 University of Kentucky	785	744	567	577	125	0	564	96
75 Yale University	770	544	949	1,344	315	0	93	362
76 San Diego State Univ	755	599	812	849	70	67	249	369
77 Oklahoma State University	748	1,035	283	851	489	25	136	98
78 Syracuse University	739	827	956	904	40	15	23	661
79 Fordham University	693	801	815	1,375	0	0	693	0
80 University of Montana	688	744	51	54e	78	0	0	610
Total, 1st 80 insts.	215,300	188,821	177,856	156,927	51,592	26,105	62,640	74,963
81 George Mason University	652	547	9	270	55	418	179	0
82 Case Western Reserve Univ	649	603	613	487	83	0	205	361
83 U of Houston	629	316	298	966	68	253	10	298
84 University of Chicago	611	1,027	1,193	952	90	19	23	479
85 New York University	577	356	793	717	196	186	48	147
86 Northeast Louisiana Univ	569	444	0	0	0	0	0	569
87 North Dakota State Univ	565	466	343	165	552	0	13	0
88 Univ of Ill Chicago	555	817	522	671	32	0	0	523
89 University of Oregon	546	567	555	370	56	171	0	319
90 South Carolina St College	544 i	544 i	340 i	299	458 i	0 i	86 i	0 i
Total, 1st 90 insts.	221,197	194,508	182,522	161,824	53,182	27,152	63,204	77,659
91 University of N Dakota	537	399	305	434	0	0	0	537
92 Univ of Cal Davis	528	474	361	526	51	86	119	272
93 SUNY at Buffalo	521	1,139	924	326	0	0	49	472
94 University of Idaho	510	488	322	776	281	0	229	0
95 Boston University	502	586	704	313	483	0	0	19
96 Illinois State University	499	300	123	291	0	0	0	499
97 Florida State University	489	257	198	229	0	0	200	289
98 U Tex Hlth Sci Ctr Houstn	477	782	948	915	0	0	477	0
99 Lehigh University	469	124	180	277	0	0	469	0
100 Louisiana State Univ Sys	464	234	110	216	65	94	20	285
Total, 1st 100 insts.	226,193	199,291	186,697	166,127	54,062	27,332	64,767	80,032
Total, all other sampled insts.	18,297	22,786	22,205	22,402	4,024	1,350	6,322	6,601
Estimated total non-sampled insts.	2,698	2,625	2,338	0	714	118	525	1,340

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-66. Current fund expenditures for research equipment at universities and colleges, by science and engineering field and source of funds: fiscal years 1984, 1990, and 1991

[Dollars in thousands]

Field	Total			Federal			Non-Federal		
	1984	1990	1991	1984	1990	1991	1984	1990	1991
Total	536,552	1,020,433	1,026,338	341,762	604,511	607,429	194,790	415,922	418,908
Engineering, total	89,954	222,843	233,667	57,196	129,326	134,492	32,758	93,517	99,175
Aeronautical and astronautical	4,342	12,536	17,362	3,267	10,138	14,460	1,075	2,399	2,902
Chemical	7,422	18,074	19,940	3,999	8,338	9,773	3,423	9,736	10,167
Civil	6,808	20,306	18,011	3,807	11,824	8,133	3,001	8,483	9,878
Electrical	24,214	58,411	51,591	16,557	36,037	29,875	7,657	22,374	21,716
Mechanical	14,817	32,861	34,110	10,378	18,317	17,556	4,439	14,544	16,555
Metallurgical and materials 1/	--	27,005	33,362	--	17,962	20,023	--	9,043	13,340
Other, n.e.c	32,351	53,648	59,291	19,188	26,711	34,672	13,163	26,937	24,618
All sciences, total	615,787	1,131,194	1,129,402	366,045	617,877	589,284	249,742	513,317	540,118
Physical sciences	103,498	190,290	189,482	82,658	143,042	138,384	20,840	47,248	51,098
Astronomy	5,894	13,156	14,390	4,376	8,308	8,958	1,518	4,848	5,432
Chemistry	42,300	73,230	70,543	32,169	51,936	47,769	10,131	21,294	22,774
Physics	47,046	90,163	86,787	39,680	73,260	67,949	7,366	16,903	18,838
Other, n.e.c	8,258	13,741	17,762	6,433	9,538	13,708	1,825	4,203	4,054
Environmental sciences	41,227	72,861	69,838	29,317	47,962	43,656	11,910	24,899	26,182
Atmospheric	6,859	11,222	10,102	5,109	8,580	7,614	1,750	2,642	2,488
Earth sciences	15,772	28,203	27,996	9,914	16,115	15,436	5,858	12,088	12,559
Oceanography	14,502	20,203	20,014	11,667	15,180	14,513	2,835	5,023	5,501
Other, n.e.c	4,094	13,233	11,726	2,627	8,087	6,093	1,467	5,146	5,633
Mathematical sciences	5,328	9,980	11,048	4,086	6,496	6,569	1,242	3,484	4,478
Computer sciences	22,251	47,891	58,082	16,851	31,935	43,446	5,400	15,956	14,635
Life sciences	242,893	424,168	411,070	137,199	222,103	217,556	105,694	202,065	193,514
Agricultural sciences	41,719	53,354	52,806	13,478	14,825	15,830	28,241	38,530	36,975
Biological sciences	89,056	171,551	165,614	60,248	102,008	100,044	28,808	69,543	65,570
Medical sciences	103,205	180,428	171,356	58,239	95,732	91,044	44,966	84,696	80,312
Other, n.e.c	8,913	18,834	21,294	5,234	9,538	10,637	3,679	9,296	10,657
Psychology	7,285	10,697	11,245	4,970	6,673	7,122	2,315	4,023	4,123
Social sciences	13,798	15,122	14,229	3,887	4,755	5,009	9,911	10,367	9,221
Economics	2,719	3,962	4,513	1,220	1,040	1,450	1,499	2,922	3,063
Political science	1,091	1,434	2,081	425	326	657	666	1,108	1,424
Sociology	1,920	2,930	2,723	1,056	1,205	1,348	864	1,725	1,375
Other, n.e.c	8,068	6,797	4,913	1,186	2,184	1,554	6,882	4,613	3,359
Other sciences, n.e.c	10,318	26,581	27,676	5,598	12,219	11,194	4,720	14,362	16,482

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-67. Current fund expenditures for research equipment at doctorate-granting institutions, by science and engineering field and source of funds: fiscal years 1984, 1990, and 1991

[Dollars in thousands]

Field	Total			Federal			Non-Federal		
	1984	1990	1991	1984	1990	1991	1984	1990	1991
Total	522,677	992,697	1,002,009	332,950	591,717	594,994	189,727	400,980	407,015
Engineering, total	88,250	215,787	230,499	56,426	127,748	133,414	31,824	88,039	97,085
Aeronautical and astronautical	4,173	12,521	17,210	3,185	10,130	14,426	988	2,391	2,784
Chemical	7,406	17,995	19,869	3,995	8,266	9,724	3,411	9,729	10,145
Civil	6,604	19,529	17,310	3,683	11,517	8,063	2,921	8,012	9,247
Electrical	23,730	57,531	50,999	16,308	35,605	29,586	7,422	21,926	21,413
Mechanical	14,529	31,358	33,482	10,254	17,774	17,198	4,275	13,584	16,284
Metallurgical and materials 1/	--	26,914	33,173	--	17,882	19,854	--	9,032	13,319
Other, n.e.c	31,808	49,939	58,456	19,001	26,574	34,563	12,807	23,365	23,893
All sciences, total	601,334	1,104,964	1,101,020	356,343	604,946	576,242	244,991	500,018	524,778
Physical sciences	100,689	184,249	181,489	80,901	139,390	133,773	19,788	44,859	47,716
Astronomy	5,829	13,155	14,390	4,339	8,307	8,958	1,490	4,848	5,432
Chemistry	40,637	69,784	65,333	31,194	50,258	45,073	9,443	19,526	20,260
Physics	46,045	87,667	84,085	38,985	71,310	66,102	7,060	16,357	17,983
Other, n.e.c	8,178	13,643	17,681	6,383	9,515	13,640	1,795	4,128	4,041
Environmental sciences	39,933	70,233	67,380	28,493	46,452	41,780	11,440	23,781	25,600
Atmospheric	6,774	11,170	9,892	5,030	8,565	7,505	1,744	2,605	2,387
Earth sciences	15,316	26,296	27,427	9,687	15,067	15,083	5,629	11,229	12,344
Oceanography	14,000	19,741	18,572	11,309	14,812	13,227	2,691	4,929	5,345
Other, n.e.c	3,843	13,026	11,489	2,467	8,008	5,965	1,376	5,018	5,524
Mathematical sciences	4,980	9,648	9,546	3,915	6,403	6,126	1,065	3,245	3,420
Computer sciences	21,645	45,546	56,462	16,586	30,583	42,607	5,059	15,063	13,855
Life sciences	237,666	416,252	405,643	133,192	218,103	214,716	104,474	198,149	190,927
Agricultural sciences	39,551	50,999	50,750	11,552	13,295	14,400	27,999	37,704	36,350
Biological sciences	86,268	166,182	162,469	58,381	99,676	98,781	27,887	66,506	63,688
Medical sciences	103,040	180,268	171,145	58,098	95,609	90,911	44,942	84,659	80,234
Other, n.e.c	8,807	18,803	21,279	5,161	9,523	10,624	3,646	9,280	10,655
Psychology	6,914	9,949	10,352	4,728	6,329	6,596	2,186	3,620	3,756
Social sciences	12,485	14,551	13,535	3,241	4,626	4,820	9,244	9,925	8,715
Economics	2,235	3,832	4,248	895	970	1,336	1,340	2,862	2,912
Political science	921	1,371	2,039	316	317	657	605	1,054	1,382
Sociology	1,684	2,746	2,494	943	1,184	1,301	741	1,562	1,193
Other, n.e.c	7,645	6,602	4,754	1,087	2,155	1,526	6,558	4,447	3,228
Other sciences, n.e.c	10,115	26,382	27,103	5,468	12,083	11,162	4,647	14,299	15,941

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-68. Current fund expenditures for research equipment at universities and colleges, by science and engineering field, source of funds, and type of control: fiscal year 1991

[Dollars in thousands]

Field	Total			Federal			Non-Federal		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
Total	1,026,338	681,483	344,855	607,429	363,382	244,047	418,908	318,101	100,808
Engineering, total	233,667	162,400	71,267	134,492	85,933	48,560	99,175	76,468	22,707
Aeronautical and astronautical	17,362	12,909	4,453	14,460	10,743	3,717	2,902	2,166	736
Chemical	19,940	13,476	6,464	9,773	6,498	3,275	10,167	6,978	3,189
Civil	18,011	14,937	3,073	8,133	6,293	1,840	9,878	8,644	1,234
Electrical	51,591	30,963	20,628	29,875	15,472	14,403	21,716	15,491	6,225
Mechanical	34,110	22,550	11,561	17,556	9,446	8,110	16,555	13,104	3,451
Metallurgical and materials 1/	33,362	26,751	6,611	20,023	16,754	3,269	13,340	9,998	3,342
Other, n.e.c	59,291	40,814	18,477	34,672	20,726	13,946	24,618	20,087	4,531
All sciences, total	1,129,402	782,992	346,409	589,284	370,705	218,580	540,118	412,288	127,830
Physical sciences	189,482	113,194	76,288	138,384	75,457	62,927	51,098	37,737	13,361
Astronomy	14,390	7,664	6,726	8,958	4,013	4,945	5,432	3,651	1,781
Chemistry	70,543	47,391	23,153	47,769	30,654	17,116	22,774	16,737	6,037
Physics	86,787	48,358	38,429	67,949	34,754	33,185	18,838	13,594	5,244
Other, n.e.c	17,762	9,782	7,980	13,708	6,027	7,681	4,054	3,755	299
Environmental sciences	69,838	50,446	19,392	43,655	27,527	16,129	26,182	22,919	3,263
Atmospheric	10,107	8,099	2,003	7,614	5,754	1,860	2,488	2,345	143
Earth sciences	27,996	19,210	8,786	15,436	7,936	7,501	12,559	11,274	1,285
Oceanography	20,014	14,254	5,760	14,513	9,755	4,758	5,501	4,499	1,002
Other, n.e.c	11,726	8,883	2,843	6,093	4,083	2,010	5,633	4,800	833
Mathematical sciences	11,048	6,960	4,088	6,569	3,141	3,428	4,478	3,818	660
Computer sciences	58,082	36,741	21,341	43,446	28,042	15,404	14,635	8,699	5,936
Life sciences	411,070	270,983	140,087	217,556	125,690	91,867	193,514	145,293	48,221
Agricultural sciences	52,806	50,313	2,493	15,830	15,230	600	36,975	35,082	1,893
Biological sciences	165,614	101,247	64,368	100,044	53,660	46,385	65,570	47,587	17,983
Medical sciences	171,356	104,905	66,450	91,044	51,338	39,706	80,312	53,567	26,744
Other, n.e.c	21,294	14,518	6,776	10,637	5,461	5,176	10,657	9,057	1,600
Psychology	11,245	7,582	3,663	7,122	4,694	2,427	4,123	2,887	1,236
Social sciences	14,229	10,904	3,326	5,009	3,899	1,110	9,221	7,005	2,216
Economics	4,513	3,684	829	1,450	1,273	177	3,063	2,411	652
Political science	2,081	1,464	617	657	545	112	1,424	919	505
Sociology	2,723	2,138	585	1,348	985	363	1,375	1,153	222
Other, n.e.c	4,913	3,618	1,295	1,554	1,096	458	3,359	2,522	837
Other sciences, n.e.c	27,676	22,273	5,403	11,194	8,999	2,195	16,482	13,274	3,208

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-69. Total and federally financed current-fund expenditures for research equipment at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	1,026,338	1,020,433	989,773	912,090	607,429	604,511	595,658	576,609
1 Univ of Wis-Madison	25,841	29,015	28,875	25,303	13,753	15,693	15,517	13,376
2 Johns Hopkins Univ	25,567	25,384	26,830	27,802	23,489	23,199	24,712	25,983
3 Mass Inst of Technology	23,820	21,498	13,957	19,344	18,079	15,468	8,693	14,386
4 Louisiana State Univ Sys	23,398	18,836	14,114	5,411	13,347	10,539	6,015	2,687
5 University of Washington	22,317	16,651	19,316	14,833	16,540	13,871	13,832	11,853
6 Cornell University	21,912	21,461	22,844	24,039	12,504	13,108	14,583	16,032
7 University of Ill Urbana	21,437	19,115	21,841	21,709	9,957	10,635	13,336	13,115
8 Stanford University	20,805	16,496	19,139	23,919	18,717	14,643	16,755	21,791
9 California Inst of Tech	16,242	14,583	13,371	11,147	14,497	13,176	11,557	9,757
10 University of Michigan	16,118	11,881	15,696	15,308	9,446	7,639	10,709	9,464
Total, 1st 10 insts.	217,457	194,920	195,983	192,815	150,329	137,971	135,709	138,444
11 Pennsylvania State Univ	15,118	13,967	18,400	11,301	11,245	7,411	11,384	5,795
12 New Mexico State Univ	14,508	8,043i	1,579	2,376	13,768	6,170i	1,162	1,955
13 Texas A & M University	14,046	15,743	14,023	12,120	4,818	6,601	4,339	5,217
14 University of Arizona	13,882	15,894	12,300	11,229	7,710	9,438	7,092	7,118
15 University of Minnesota	13,470	16,021	15,851	10,868	7,203	8,662	8,621	6,365
16 N C State Univ at Raleigh	12,736	10,588	10,364	9,858	5,516	4,568	4,747	5,414
17 Univ of Cal San Diego	12,227	10,989	8,630	7,672	7,864	7,215	6,957	5,820
18 Columbia Univ Main Div	11,552	11,709	10,443	10,852	9,526	10,044	8,192	8,344
19 Univ of Texas at Austin	11,542	11,001	11,454	10,158	7,248	6,952	7,875	7,422
20 Iowa St U of Sci & Tech	11,477	6,258	4,159	4,468	7,400	2,737	2,091	2,790
Total, 1st 20 insts.	348,015	315,133	303,186	283,717	232,627	207,769	198,169	194,684
21 Duke University	11,203	8,598	8,451	7,148	8,045	5,624	6,062	5,163
22 Georgia Institute of Tech	11,137	10,100	11,977	8,152	6,397	5,696	6,723	4,864
23 Yale University	11,063	11,399	11,010	11,748	7,706	8,690	8,329	9,538
24 Univ of Southern Cal	10,530	9,522	9,879	10,556	9,103	7,795	8,346	8,925
25 Univ of Nevada, Las Vegas	10,245	7,170i	4,097i	1,024	10,243	6,159i	3,222i	641
26 Northwestern University	10,025	8,919	8,445	7,521	3,477	4,114	4,001	3,597
27 University of Georgia	9,480	9,656	8,819	6,593e	3,205	2,699	2,931	2,776e
28 Univ of Pennsylvania	9,289	10,867	9,436	7,511	6,650	7,680	6,571	5,360
29 University of Miami	9,024	9,738	4,842	5,517	6,720	6,225	3,263	3,790
30 Harvard University	8,834	7,291	11,385	10,072	6,839	5,575	9,354	7,855
Total, 1st 30 insts.	448,845	408,393	391,527	359,559	301,012	268,026	257,077	247,193
31 Baylor Col of Medicine	8,765	8,451	11,511	7,053	4,209	3,964	5,924	4,493
32 Ohio State University	8,702	6,849	6,693	9,199	3,894	3,020	3,064	3,695
33 Univ. of Colorado	8,311	8,336	8,079	7,802	6,494	6,380	6,614	6,214
34 Washington University	8,262	8,921	7,523	6,883	5,952	6,108	5,614	5,199
35 Univ of NC at Chapel Hill	8,212	7,192	7,901	7,062	4,227	4,254	4,774	4,402
36 University of Utah	8,044	7,398	5,489	5,838	4,283	3,245	3,746	4,518
37 Purdue University	7,899	7,690	9,112	9,505	4,516	4,870	6,211	7,059
38 University of Iowa	7,840	8,033	8,772	8,001	3,278	3,974	4,904	3,319
39 Univ of Cal San Francisco	7,661	7,032	7,677	6,376	4,889	4,724	5,107	3,776
40 Carnegie-Mellon Univ	7,618	8,358	8,027	10,006	5,006	5,913	5,953	7,930
Total, 1st 40 insts.	530,159	486,653	472,311	437,284	347,760	314,478	308,982	297,798
41 University of Chicago	7,514	9,067	8,929	7,465	6,257	7,937	7,932	6,315
42 Univ of Cal Los Angeles	7,433	9,671	7,995	6,589	4,810	5,820	5,240	4,147
43 University of Rochester	7,310	10,730	11,453	9,672	5,605	8,914	9,142	8,520
44 Univ of Nebraska-Lincoln	7,017	5,586	5,114	3,316	1,692	1,209	1,082	1,409
45 University of Florida	6,996	9,622	9,753	7,044	2,795	5,059	5,022	2,862
46 Univ. Of Tennessee System	6,638	5,501	7,420	6,994	2,377	2,538	2,947	2,937
47 Univ of South Carolina	6,543	5,563	3,350	4,674	1,236	2,514	1,322	1,541
48 Arizona State University	6,488	7,571	5,280	4,487	1,698	1,920	3,057	1,876
49 UT SW Medical Ctr-Dallas	6,364	5,772	5,153	3,961	2,335	2,283	1,893	1,873
50 Rutgers the St Univ of NJ	6,337	6,423	7,850	9,583	2,138	1,665	1,642	1,437
Total, 1st 50 insts.	598,799	562,159	544,608	501,069	378,703	354,337	348,261	330,715

See explanatory information, if any, and SOURCE(S) at end of table.

Table B-69. Total and federally financed current-fund expenditures for research equipment at universities and colleges: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
51 Univ of Massachusetts	5,966	6,427	6,976	8,008	3,641	2,948	3,931	4,821
52 SUNY at Stony Brook	5,912	7,366	5,426	5,733	4,722	6,335	4,427	4,952
53 Indiana University	5,890	5,789	6,115	6,364	3,572	3,934	4,908	5,279
54 Univ of Missouri Columbia	5,870	4,489	4,786	5,763	1,552	683	1,341	831
55 University of Pittsburgh	5,798	6,309	5,202	5,377	3,964	4,822	3,947	3,918
56 Univ of Cal Berkeley	5,737	6,562	7,077	7,167	4,285	4,728	5,721	6,094
57 Univ of MD College Park	5,638	9,798	9,648	8,959	4,803	4,255	3,576	4,276
58 Case Western Reserve Univ	5,441	5,005 i	4,571 i	4,137	3,989 i	3,779 i	3,641 i	3,297
59 Colorado State University	5,376	4,967	5,724	5,804	4,466	4,257	4,896	5,177
60 Michigan State University	5,282 i	5,543	6,205	6,685	2,444 i	3,967	4,570	4,926
Total, 1st 60 insts.	655,709	624,414	606,338	565,066	416,141	394,045	389,219	374,286
61 University of Virginia	5,093	5,218	5,487	5,648	3,488	3,630	3,995	4,649
62 University of Connecticut	4,947	4,293	5,830	4,289	2,039	1,647	3,006	2,708
63 Univ of Cal Davis	4,936	5,904	5,465	4,662	2,440	3,084	3,268	2,860
64 SUNY at Buffalo	4,915	5,081	6,225	3,948	3,078	3,295	3,324	3,038
65 Vanderbilt University	4,904	5,017	4,855	4,522	4,229	4,542	4,526	2,957
66 Emory University	4,896	5,372	5,257	5,409	3,112	2,805	3,251	4,271
67 Wayne State University	4,859	4,828	7,161	5,831	1,102	892	2,004	1,731
68 Univ of Ill Chicago	4,851	5,773	6,287	6,126	1,504	3,031	2,973	3,238
69 Princeton University	4,792	6,184	6,040	7,036	4,034	4,875	5,110	5,435
70 Auburn University	4,718	4,782	4,333	5,976	1,467	1,141	1,214	2,265
Total, 1st 70 insts.	704,620	676,866	663,278	618,513	442,634	422,987	421,890	407,438
71 US Naval Postgrad School	4,614	3,369	3,776	4,638	4,614	3,352	3,750	4,638
72 Yeshiva University	4,439	4,161	4,569	3,905	2,322	3,265	1,817	2,475
73 University of Oklahoma	4,434	4,150	4,207	4,664	723	1,110	1,361	1,478
74 Woods Hole Ocngrphic Inst	4,421 i	4,734	8,067	5,800	3,857 i	4,219	7,714	4,200
75 VA Polytech Inst & St U	4,369	5,624	5,727	3,865	1,888	1,986	2,088	1,549
76 Univ Alabama Birmingham	4,322	5,184	5,474	5,569	2,572	3,173	3,275	2,968
77 Rensselaer Polytech Inst	4,316	5,728	3,717	4,068	2,266	3,424	2,061	1,829
78 Univ of South Florida	4,239	7,360	5,205	1,106	1,757	3,735	2,847	757
79 West Virginia University	4,150	5,727	3,313	2,344	2,038	2,555	1,075	1,234
80 Univ of Cal Irvine	4,137	4,116	3,396	2,684	3,151	3,131	2,539	2,285
Total, 1st 80 insts.	748,061	727,019	710,729	657,156	467,822	452,937	450,417	430,851
81 Rockefeller University	4,095	3,949	3,820	3,332	1,884	1,817	1,758	1,533
82 U of Houston	4,083	4,640	4,523	3,154	1,563	2,088	2,444	1,864
83 Syracuse University	4,052	4,626	3,149	5,994	788	2,469	1,648	5,619
84 University of New Mexico	3,998	3,126	4,728	3,840	1,728	1,476	2,837	2,040
85 Univ of MD Balt Prof Sch	3,956	4,654	6,022	4,994	1,093	1,274	1,722	1,754
86 Oklahoma State University	3,897	4,432	3,877	4,595	1,564	2,262	1,519	2,197
87 Utah State University	3,882	2,347	2,907	2,961	1,309	725	681	1,098
88 Oregon State University	3,769	6,284	4,159	3,900	3,027	5,287	2,808	2,733
89 Kans St U - Ag & App Sci	3,722	3,043	3,791	3,724	1,542	1,146	1,666	1,797
90 Rice University	3,649	2,828	2,275	1,893	2,648	2,522	1,989	1,783
Total, 1st 90 insts.	787,164	766,948	749,980	695,543	484,968	474,003	469,489	453,269
91 University of Cincinnati	3,642	4,706	4,433	3,414	1,559	2,713	2,668	1,913
92 Florida State University	3,622	5,053	4,782	3,065	1,858	2,658	2,165	1,890
93 Univ of Central Florida	3,559	4,415	2,793	545	1,123	1,284	1,105	192
94 Brown University	3,506	4,883	2,905	4,234	2,271	3,905	2,439	3,351
95 Boston University	3,502	3,593	2,588	2,577	2,806	2,777	2,200	2,106
96 New York University	3,349	3,726	3,485	3,689	2,533	2,815	2,842	3,051
97 University of Kentucky	3,258	2,750	2,963	2,839	1,046	1,283	1,469	1,136
98 UT MD Anderson Cancer Ctr	3,240	2,828	3,190	3,879	1,131	777	1,106	1,499
99 San Diego State Univ	3,210	3,170	2,279	2,609	1,136	1,060	638	737
100 N J Inst of Technology	3,183	1,591 i	0	616	162	285 i	0	64
Total, 1st 100 insts.	821,235	803,663	779,398	723,010	500,593	493,560	486,121	469,208
Total, all other sampled insts.	192,570	202,639	197,193	189,080	101,854	106,388	104,395	107,401
Estimated total non-sampled insts.	12,533	14,131	13,182	0	4,982	4,563	5,142	0

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-70. R&D expenditures at university-administered federally funded research and development centers, by character of work: fiscal years 1953-91

[Dollars in millions]

Fiscal year	Total	Character of work			
		Basic research		Applied research and development	
		Amount	Percent of total	Amount	Percent of total
1953	121	33	27.3%	88	72.7%
1954	141	39	27.7	102	72.3
1955	180	49	27.2	131	72.8
1956	194	51	26.3	143	73.7
1957	240	65	27.1	175	72.9
1958	293	78	26.6	215	73.4
1959	338	92	27.2	246	72.8
1960	360	97	26.9	263	73.1
1961	410	115	28.0	295	72.0
1962	470	136	28.9	334	71.1
1963	530	159	30.0	371	70.0
1964	629	191	30.4	438	69.6
1965	629	208	33.1	421	66.9
1966	630	227	36.0	403	64.0
1967	673	250	37.1	423	62.9
1968	719	276	38.4	443	61.6
1969	725	275	37.9	450	62.1
1970	737	269	36.5	468	63.5
1971	716	260	36.3	456	63.7
1972	753	244	32.4	509	67.6
1973	817	296	36.2	521	63.8
1974	865	390	45.1	475	54.9
1975	987	439	44.5	548	55.5
1976	1,147	512	44.6	635	55.4
1977	1,384	600	43.4	784	56.6
1978 1/	1,717	--	--	--	--
1979	1,935	1,015	52.5	919	47.5
1980	2,246	1,124	50.0	1,122	50.0
1981	2,486	1,261	50.7	1,225	49.3
1982	2,479	1,317	53.1	1,161	46.8
1983	2,737	1,472	53.8	1,264	46.2
1984	3,150	1,675	53.2	1,475	46.8
1985	3,523	1,749	49.6	1,774	50.4
1986	3,895	1,859	47.7	2,036	52.3
1987	4,206	2,012	47.8	2,194	52.2
1988	4,531	2,222	49.0	2,308	50.9
1989	4,730	2,330	49.3	2,399	50.7
1990	4,832	2,403	49.7	2,429	50.3
1991	5,079	2,572	50.6	2,507	49.4

1/ Data were not collected in fiscal year 1978.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-71. R&D expenditures at university-administered federally funded research and development centers, by science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Field	1984	1985	1986	1987	1988	1989	1990	1991
Total	3,150,380	3,523,092	3,894,806	4,206,084	4,530,562	4,729,612	4,831,971	5,078,544
Engineering, total	1,097,444	1,296,043	1,445,252	1,547,061	1,614,250	1,642,799	1,708,134	1,788,565
Aeronautical and astronautical	86,022	107,065	126,566	132,238	146,894	145,035	143,643	156,265
Chemical	39,230	40,082	40,048	41,884	43,964	40,162	40,754	43,356
Civil	13,596	15,597	16,014	17,568	17,500	16,439	15,083	16,109
Electrical	390,967	454,233	514,263	550,430	555,635	568,626	604,894	613,344
Mechanical	396,962	489,469	540,103	570,698	602,857	628,057	627,262	646,379
Metallurgical and materials 1/	--	--	--	--	--	--	3,481	25,833
Other, n.e.c	170,667	189,597	208,258	234,243	247,400	244,480	273,017	287,279
All sciences, total	2,052,936	2,227,049	2,449,554	2,659,023	2,916,312	3,086,813	3,123,837	3,289,979
Physical sciences	1,369,108	1,448,808	1,540,627	1,660,404	1,717,181	1,828,314	1,824,648	1,917,223
Astronomy	77,683	73,330	79,047	82,360	117,658	112,493	112,239	121,353
Chemistry	221,002	226,440	246,911	261,267	274,647	274,359	261,048	251,787
Physics	1,023,210	1,097,949	1,159,738	1,257,808	1,263,616	1,378,015	1,382,608	1,460,765
Other, n.e.c	47,213	51,089	54,931	58,969	61,260	63,447	68,753	83,318
Environmental sciences	175,152	200,074	232,606	257,800	289,352	298,529	292,045	318,874
Atmospheric	66,604	83,498	99,017	103,504	91,069	98,594	103,239	112,978
Earth sciences	42,913	46,552	50,361	76,276	80,190	65,212	64,894	71,341
Oceanography	15,196	16,056	19,489	2,032	1,764	1,916	1,664	2,226
Other, n.e.c	50,439	53,968	63,739	75,988	116,329	132,807	122,248	132,329
Mathematical sciences	81,376	92,858	109,102	121,793	126,084	128,664	135,374	132,222
Computer sciences	266,268	338,116	427,297	472,766	621,744	668,092	685,954	715,744
Life sciences	106,313	110,905	107,506	115,416	123,508	130,556	142,394	145,531
Agricultural sciences	639	633	663	684	1,397	1,175	1,017	1,041
Biological sciences	80,730	82,057	85,195	87,202	91,712	101,287	112,559	115,145
Medical sciences	11,093	10,729	8,572	10,570	12,996	10,114	10,345	11,355
Other, n.e.c	13,851	17,486	13,076	16,960	17,403	17,980	18,473	17,990
Psychology	240	264	294	899	973	947	1,010	1,075
Social sciences	18,056	17,591	19,343	21,421	27,668	23,291	29,744	33,935
Economics	3,590	4,401	4,043	2,554	1,477	491	632	741
Political science	3,319	4,038	4,994	4,563	5,843	3,858	6,459	7,610
Sociology	0	0	0	0	0	0	0	0
Other, n.e.c	11,147	9,152	10,306	14,304	20,548	18,942	22,653	25,584
Other sciences, n.e.c	36,423	18,433	12,779	8,524	9,602	8,420	12,668	25,375

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-72. Federally financed R&D expenditures at university-administered federally funded research and development centers, by science and engineering field: fiscal years 1984-91

[Dollars in thousands]

Field	1984	1985	1986	1987	1988	1989	1990	1991
Total	3,106,166	3,476,699	3,862,913	4,174,718	4,498,909	4,692,202	4,791,517	5,034,126
Engineering, total	1,084,877	1,284,767	1,435,137	1,539,481	1,607,422	1,633,585	1,699,499	1,778,735
Aeronautical and astronautical	85,892	106,959	126,481	132,169	146,813	144,910	143,495	156,108
Chemical	38,649	39,463	39,364	41,378	43,427	39,534	40,218	42,671
Civil	13,370	15,369	15,815	17,415	17,335	16,238	14,892	15,871
Electrical	386,868	450,988	511,852	548,560	554,139	566,345	602,489	611,006
Mechanical	391,728	485,027	536,435	567,922	600,584	624,909	624,402	643,332
Metallurgical and materials 1/	--	--	--	--	--	--	3,481	25,778
Other, n.e.c	168,370	186,961	205,190	232,037	245,124	241,649	270,522	283,969
All sciences, total	2,021,289	2,191,932	2,427,776	2,635,237	2,891,487	3,058,617	3,092,018	3,255,391
Physical sciences	1,354,583	1,433,957	1,529,586	1,649,404	1,707,217	1,813,116	1,805,714	1,898,561
Astronomy	75,756	71,401	77,127	80,418	115,601	110,724	110,708	120,725
Chemistry	218,232	223,816	244,779	259,457	272,970	271,891	258,738	248,897
Physics	1,014,218	1,088,499	1,153,577	1,251,388	1,258,268	1,368,531	1,370,313	1,449,997
Other, n.e.c	46,377	50,241	54,103	58,141	60,378	61,970	65,955	78,942
Environmental sciences	167,137	188,653	229,989	254,889	286,106	294,192	288,489	314,269
Atmospheric	60,218	73,684	98,069	102,269	89,620	96,625	101,226	110,990
Earth sciences	42,126	45,883	49,815	75,782	79,720	64,938	64,418	70,364
Oceanography	15,196	16,056	19,489	2,032	1,764	1,916	1,664	2,226
Other, n.e.c	49,597	53,030	62,616	74,806	115,002	130,713	121,181	130,689
Mathematical sciences	80,092	91,770	108,196	121,075	125,434	127,724	134,246	131,130
Computer sciences	265,041	337,117	426,508	472,142	621,172	667,127	684,876	713,894
Life sciences	104,582	108,862	105,540	111,233	117,451	126,607	136,719	138,335
Agricultural sciences	639	633	663	684	1,397	1,175	1,017	1,041
Biological sciences	79,327	80,430	83,955	85,767	90,372	97,639	107,206	108,423
Medical sciences	11,023	10,583	8,006	7,973	8,451	10,061	10,304	11,161
Other, n.e.c	13,593	17,216	12,916	16,809	17,231	17,732	18,192	17,710
Psychology	240	264	294	899	973	947	1,010	1,075
Social sciences	17,018	16,751	18,661	20,890	27,551	22,942	29,231	33,325
Economics	2,836	3,773	3,563	2,195	1,441	491	632	741
Political science	3,268	3,979	4,930	4,523	5,781	3,799	6,346	7,471
Sociology	0	0	0	0	0	0	0	0
Other, n.e.c	10,914	8,999	10,168	14,172	20,329	18,652	22,253	25,113
Other sciences, n.e.c	32,596	14,558	9,002	4,705	5,583	5,962	11,733	24,802

1/ Data for metallurgical and materials engineering were not collected separately prior to fiscal year 1990.

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-73. R&D expenditures at university-administered federally funded research and development centers, by science/engineering field: fiscal year 1991

[Dollars in thousands]

Institution ranking	Total	Engi-neering	Physical sciences	Environ-mental sciences	Math & computer sciences	Life sciences	Psy-chology	Social sciences	Other sciences
Total, all institutions	5,078,544	1,788,565	1,917,223	318,874	847,966	145,531	1,075	33,935	25,375
1 Lawrence Livermore Lab	1,135,400	535,877	365,200	32,589	166,152	35,582	0	0	0
2 Jet Propulsion Laboratory	1,105,617	424,806	80,659	91,034	509,118	0	0	0	0
3 Los Alamos National Lab	947,550	317,429	447,244	7,580	92,860	30,322	0	33,164	18,951
4 Argonne Natl Laboratory	392,934	185,375	103,874	84,522	5,210	13,953	0	0	0
5 Lincoln Laboratory	389,453	274,681	74,269	0	40,230	0	273	0	0
6 Brookhaven Nat'l Lab 1/	283,903	40,092	208,896	10,213	660	23,105	0	651	286
7 Lawrence Berkeley Lab	207,856	3,527	146,380	13,226	3,427	35,207	0	0	6,089
8 Fermi Nat Accelrtr Lab 2/	180,582	0	180,582	0	0	0	0	0	0
9 Stfrd Linear Accelrtr Ctr	113,932	0	113,932	0	0	0	0	0	0
10 Plasma Physics Laboratory	90,818	0	90,818	0	0	0	0	0	0
Total, 1st 10 insts.	4,848,045	1,781,787	1,811,854	239,164	817,657	138,169	273	33,815	25,326
11 Natl Ctr Atmospheric Rs 3/	78,284	0	0	78,284	0	0	0	0	0
12 Continuous Elec Beam Aclr	28,590	0	26,635	0	1,955	0	0	0	0
13 Nat Opt Astro Obs 4/	27,374	0	27,374	0	0	0	0	0	0
14 Off of Sponsored Research	27,139	0	0	0	27,139	0	0	0	0
15 Ames Laboratory	26,403	4,915	20,224	0	1,215	0	0	0	49
16 Nat'l Radio Astron Obs 1/	21,872	0	21,872	0	0	0	0	0	0
17 Oak Ridge Associated U 5/	10,430	0	1,863	283	0	7,362	802	120	0
18 Nat'l Astron & Ionos Ctr	8,078	0	6,935	1,143	0	0	0	0	0
19 Inst for Adv Tech	2,329	1,863	466	0	0	0	0	0	0
Total, 1st 19 insts.	5,078,544	1,788,565	1,917,223	318,874	847,966	145,531	1,075	33,935	25,375

1/ Associated Universities, Inc

2/ Universities Research Association

3/ University Corporation for Atmospheric Research

4/ Association of Universities for Research in Astronomy, Inc

5/ Oak Ridge Associated Universities

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

Table B-74. Total and federally financed R&D expenditures at university-administered federally funded research and development centers: fiscal years 1988-91

[Dollars in thousands]

Institution ranking	Total				Federally financed			
	1991	1990	1989	1988	1991	1990	1989	1988
Total, all institutions	5,078,544	4,831,971	4,729,612	4,530,562	5,034,126	4,791,517	4,692,202	4,498,909
1 Lawrence Livermore Lab	1,135,400	1,019,920	1,004,600	939,100	1,133,588	1,016,940	1,001,518	936,996
2 Jet Propulsion Laboratory	1,105,617	1,065,848	1,078,776	1,059,250	1,105,617	1,065,848	1,078,776	1,059,250
3 Los Alamos National Lab	947,550	926,006	902,361	882,431	930,101	909,628	888,534	872,906
4 Argonne Natl Laboratory	392,934	347,660	343,280	303,273	384,212	341,757	335,512	297,786
5 Lincoln Laboratory	389,453	419,093	364,086	386,237	389,453	419,093	364,086	386,237
6 Brookhaven Nat'l Lab 1/	283,903	263,931	255,206	234,206	283,903	263,931	255,206	234,206
7 Lawrence Berkeley Lab	207,856	196,059	193,183	183,223	195,865	185,009	184,338	176,031
8 Fermi Nat Accelrtr Lab 2/	180,582	184,608	185,069	173,233	180,582	184,608	185,069	168,703
9 Stfrd Linear Accelrtr Ctr	113,932	115,160	108,710	98,034	113,932	115,160	108,710	98,034
10 Plasma Physics Laboratory	90,818	95,267	112,557	103,483	90,597	94,909	112,158	103,080
Total, 1st 10 insts.	4,848,045	4,633,552	4,547,828	4,362,470	4,807,850	4,596,883	4,513,907	4,333,229
11 Natl Ctr Atmospheric Rs 3/	78,284	66,234	63,317	58,216	76,388	64,296	61,481	56,850
12 Continuous Elec Beam Aclr	28,590	21,352	13,228	12,464	27,464	20,331	12,202	11,595
13 Nat Opt Astro Obs 4/	27,374	26,035	27,599	24,925	27,374	26,035	27,599	24,925
14 Off of Sponsored Research	27,139	24,294	20,900	19,310	27,139	24,294	20,900	19,310
15 Ames Laboratory	26,403	23,275	21,769	21,201	26,403	23,275	21,769	21,201
16 Nat'l Radio Astron Obs 1/	21,872	19,836	18,492	16,184	21,872	19,836	18,492	16,184
17 Oak Ridge Associated U 5/	10,430	9,471	8,751	8,406	9,500	8,722	8,146	8,229
18 Nat'l Astron & Ionos Ctr	8,078	7,922	7,728	7,386	7,988	7,845	7,706	7,386
19 Inst for Adv Tech	2,329	--	--	--	2,148	--	--	--
Total, 1st 19 insts.	5,078,544	4,831,971	4,729,612	4,530,562	5,034,126	4,791,517	4,692,202	4,498,909

1/ Associated Universities, Inc

2/ Universities Research Association

3/ University Corporation for Atmospheric Research

4/ Association of Universities for Research in Astronomy, Inc

5/ Oak Ridge Associated Universities

NOTE: A number of institutions have developed, or are in the process of developing, new computer systems and methodologies that enable them to report more accurately the total cost of science and engineering research; therefore, fiscal year 1991 comparisons with data reported in earlier years may be inappropriate in some areas.

KEY:
c = confidential
e = estimated
i = imputed
-- = not available

SOURCE: National Science Foundation/SRS, Survey of Scientific and Engineering Expenditures at Universities and Colleges

SECTION C. UNIVERSITY-ADMINISTERED FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTERS: FY 1991

Department of Defense

Institute for Advanced Technology (University of Texas)
Lincoln Laboratory (Massachusetts Institute of Technology)
Software Engineering Institute (Carnegie Mellon University)

Department of Energy

Ames Laboratory (Iowa State University of Science and Technology)
Argonne National Laboratory (University of Chicago and Argonne Universities Association)
Brookhaven National Laboratory (Associated Universities, Inc.)
Continuous Electron Beam Accelerator Facility (Southeastern Universities Research Association)
E. O. Lawrence Berkeley Laboratory (University of California)
E. O. Lawrence Livermore Laboratory (University of California)
Fermi National Accelerator Laboratory (Universities Research Association)
Los Alamos Scientific Laboratory (University of California)
Oak Ridge Institute of Nuclear Studies (Oak Ridge Associated Universities)
Plasma Physics Laboratory (Princeton University)
Stanford Linear Accelerator Center (Stanford University)

National Aeronautics and Space Administration

Jet Propulsion Laboratory (California Institute of Technology)

National Science Foundation

National Astronomy and Ionosphere Center (Cornell University)
National Center for Atmospheric Research (University Corporation for Atmospheric Research)
National Optical Astronomy Observatory (Association of Universities for Research in Astronomy, Inc.)
National Radio Astronomy Observatory (Associated Universities, Inc.)

SECTION D. SURVEY INSTRUMENTS

Page

Cover Letter 187

Survey Form and Crosswalk 189

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

Dear Colleague:

The National Science Foundation (NSF) requests your participation in the annual Survey of Scientific and Engineering (S&E) Expenditures at Universities and Colleges, Fiscal Year 1991. This national effort, one of a series that covers S&E resources at academic institutions, collects data on current fund expenditures for separately budgeted research and development by S&E field and source of funds, and current fund expenditures for related research equipment.

The survey data are solicited under the authority of the National Science Foundation Act of 1950, as amended, and are for statistical use only. These data are used by Congress, other Federal and State governmental planners, and the academic sector to assess the adequacy of the nation's research base. By contributing timely and accurate information to this survey, you can ensure that your institution is represented in data used by these decision-makers. You may also find the data useful to your own institution for internal and/or peer analyses.

The survey results are representative of the national population of institutions that grant graduate S&E degrees and/or annually expend at least $50,000 in separately budgeted research and development funds. While participation is voluntary and failure to respond will not have any adverse effect upon your institution, the reliability of the data and therefore the soundness of institutional, State, and national decisions based upon them are in large measure contingent upon receipt of complete and accurate data from all surveyed institutions.

Survey results are distributed as rapidly as possible to maximize the utility of these data. Selected tables are initially made available in a *Selected Data* pamphlet. A Science Resources Studies (SRS) *Data Brief* providing an overview of the survey results in text, tables, and/or graphs is published next, followed by a detailed report on the survey containing a large number of statistical tables. Survey results are also available on magnetic tape or diskettes (ASCII or Lotus 1-2-3 format) and are entered on the SRS Electronic Bulletin Board for direct access via personal computer.

The survey questionnaire is due on January 6, 1992. This packet contains the following items, several of which are described in greater detail in the subsequent text:

1. *Postcard to notify NSF of package receipt and to request ASQ*
2. *"FYI" flyer describing the NSF academic survey system*
3. *1991 R&D Expenditures Survey Form 411, with instructions and crosswalk*
4. *Facsimile showing data reported on the FY 1988-90 surveys*
5. *Envelope for returning the completed survey form*

POSTCARD

As soon as you receive this survey package, please let us know by filling out and mailing the postcard enclosed, stating the name and telephone number of the person responsible for completing the survey form.

THE 1991 SURVEY FORM 411 WITH INSTRUCTIONS AND NSF/NCES CROSSWALK

The data items requested on the 1991 survey form are identical to those on the 1990 form. Effective in 1990, the request for Capital Expenditures data was discontinued from the survey. Added was a new sub-field under "Engineering" in Items 2 and 3: *Metallurgical and Materials Engineering*. In addition, we have included the NSF-NCES Crosswalk on the last two pages of the survey instrument. The Crosswalk relates NSF's S&E fields to the codes defined by the Department of Education's National Center for Education Statistics (NCES) in its publication *A Classification of Instructional Programs*. It is provided to aid respondents whose institutional recordkeeping systems are organized according to NCES classifications.

Response burden information that is requested involves estimating the average number of hours required to complete the survey. A survey-form facsimile that shows prior years' data received from your institution or imputed by NSF is enclosed for your information.

OPTIONAL ITEM 1: CURRENT FUND EXPENDITURES BY SOURCE OF FUNDS

We have included in this year's survey instrument an optional format for Item 1 (Current Fund Expenditures for Separately Budgeted Research and Development in the Sciences and Engineering, by Source of Funds). This revision may become part of the survey questionnaire in FY 1992. In keeping with agreements concerning this survey, this revision is being offered as an option this year.

To help NSF better evaluate this proposed change, please complete the item and return it with the rest of the survey questionnaire. Refer to the back of the data sheet for instructions on completing this optional item. We would appreciate any comments you would like to share regarding this proposed change. Please note that **all data reported on the optional item 1 are STRICTLY CONFIDENTIAL. The data will not be published or released to the public, but will be used solely for internal analytic purposes.**

AUTOMATED SURVEY QUESTIONNAIRE

An automated survey questionnaire (ASQ) has been developed to provide respondents with the opportunity to edit their data submissions (for both arithmetical and trend errors) prior to sending them to NSF. Requirements for using ASQ include an IBM PC or compatible computer system and DOS 3.0 or a more recent upgrade. ***If you would like to receive ASQ (provided on diskette), please use the return postcard to request it.***

If questions arise when completing the survey form or if you wish further information regarding our publications/ diskettes, please call Ms. Marge Machen of NSF at (202) 634-4673 or Mr. Richard L. Klein of Quantum Research Corporation at (301) 657-3070. Thank you for your efforts in providing timely and meaningful statistics to NSF.

Sincerely,

Eileen L. Collins

Eileen L. Collins, Ph.D.
Acting Program Director
Science and Engineering Activities Program
Division of Science Resources Studies

NATIONAL SCIENCE FOUNDATION
Washington, D.C. 20550

SURVEY OF SCIENTIFIC AND ENGINEERING EXPENDITURES AT UNIVERSITIES AND COLLEGES, FY 1991

OPTIONAL ITEM 1

Current Fund Expenditures for Separately Budgeted Research and Development in the Sciences and Engineering, by Source of Funds, FY 1991

This year the National Science Foundation (NSF) is considering a revision to Item 1 of its *Survey of Scientific and Engineering Expenditures at Universities and Colleges* (R&D Expenditures survey). This revision may become part of the general survey instrument in FY 1992. In accordance with agreements concerning the R&D Expenditures survey, the revised version of Item 1 is being included as an optional item with the FY 1991 R&D Expenditures survey. This will allow universities and colleges an opportunity to prepare for and comment on the change to the survey instrument.

To help NSF better evaluate the implications of this revision to Item 1, please complete and return the optional item printed below. **All data reported on the optional Item 1 are STRICTLY CONFIDENTIAL. These data will not be published or available on any basis to the public; they will be used only for internal analytic purposes.** In addition, NSF would appreciate any comments concerning reporting Item 1 in the revised format as opposed to the current format.

The instructions for the optional Item 1 appear on the reverse side of this page. Please read these instructions before completing the optional item.

Thank your for your continued efforts in providing timely and meaningful statistics to NSF.

Source of funds		(1) Total (Dollars in thousands)	(2) Basic research (Percent of column 1)
a. Federal Government	1110	$	_____ %
b. State and local governments	1125		**Basic Research** is directed toward an increase of knowledge; it is research where the primary aim of the **investigator** is a fuller knowledge or understanding of the subject under study rather than a specific application thereof.
c. Industry	1150		
d. Institution funds *(sum of lines 1161, 1162, 1163 and 1164)*	1160		
(1) Institutionally financed organized research	1161		
(2) Mandatory cost sharing	1162		
(3) Voluntary cost sharing	1163		
(4) Underrecovery of indirect costs	1164		
e. All other sources	1175		
f. TOTAL *(sum of a through e)*	1100	$	_____ %

Instructions for Optional Item 1

Separately budgeted research and development (R&D) includes all funds expended for activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution. *Include* research equipment purchased under research project awards from "current fund" accounts. Also *include* research funds subcontracted to outside organizations. *Exclude* training grants, public service grants, demonstration projects, and departmental research expenditures that are not separately budgeted. Also, *exclude* any R&D expenditures in the fields of education, law, humanities, music, the arts, physical education, library science, and all other non-science fields. Allocate funding to the original sources whenever possible, as specified below. If this information is unknown, report the proximate funding source.

(1) Total

a. *Federal Government.* Report grants and contracts for R&D (including direct and reimbursed indirect costs) by all agencies of the Federal Government.

b. *State and local governments.* Include funds for R&D from State, county, municipal, and other local governments and their agencies. Include here State funds which support R&D at agricultural and other experiment stations.

c. *Industry funds.* Include all grants and contracts for R&D from profit making organizations, whether engaged in production, distribution, research, service, or other activities. Do not include grants and contracts from nonprofit foundations financed by industry; these should be reported under *All other sources* (line 1175).

d. *Institution funds.* Report funds which your institution spent for R&D activities from the following sources: (1) General-purpose State and local government appropriations (i.e. unrestricted funds); (2) general-purpose grants from industry, foundations, or other outside sources; (3) tuition and fees; (4) endowment income.

(1) *Institutionally financed organized research* (line 1161). Report those funds which are expended for research activities separately budgeted by the university. Do not include departmental research unless it is classified as separately budgeted organized research.

(2) *Mandatory cost sharing* (line 1162). Report funds which are expended as part of mandatory cost sharing with Federal Government or other grants.

(3) *Voluntary cost sharing* (line 1163). Report those funds which are expended as part of voluntary cost sharing (effort that is contributed to a project but is <u>not</u> mandated by the terms of the award).

(4) *Underrecovery of indirect costs* (line 1164). Report the estimated contribution your institution made to unreimbursed indirect costs incurred in association with R&D projects financed by outside organizations. Use the following formula to estimate your underrecovery of indirect costs:

Underrecovery of indirect costs = {[Actual indirect cost rate multiplied by **Research base** (salaries, wages, and direct cost items, but excluding indirect cost recoveries)] minus **Indirect costs collected}**

Institutional funds (line 1160) should equal the sum of lines 1161 through 1164.

e. *All other sources.* Include grants for R&D from nonprofit foundations and voluntary health agencies as well as from all other sources not elsewhere classified. Funds from foundations which are affiliated with, or granted solely to your institution, should be included under line 1160, "Institution funds". Funds for R&D received from a health agency that is a unit of a State or local government should be reported under "State and local governments" (line 1125). Also include gifts from individuals that are restricted by the donor to research.

(2) *Basic research.* **Distinguish basic from nonbasic (i.e., applied) research, as defined in column (2) on the reverse.**

Questions on this item can be directed to Marge Machen of NSF at (202) 634-4673 or Richard L. Klein of Quantum Research Corporation at (301) 657-3070.

NSF Form 411 (10-91)

FORM APPROVED
OMB No. 3145-0100
Expiration Date. 12/31/92

NATIONAL SCIENCE FOUNDATION
Washington, D.C. 20550

SURVEY OF SCIENTIFIC AND ENGINEERING EXPENDITURES AT UNIVERSITIES AND COLLEGES, FY 1991

Organizations are requested to complete and return this form to NSF:

QUANTUM RESEARCH CORPORATION
7315 Wisconsin Avenue; Suite 631W
Bethesda, MD 20814
[fax (301) 657-3862]

This form should be returned by January 6, 1992. Your cooperation in returning the survey questionnaire promptly is very important.

This information is solicited under the authority of the National Science Foundation Act of 1950, as amended. All information you provide will be used for statistical purposes only. Your response is entirely voluntary and your failure to provide some or all of the information will in no way adversely affect your institution.

All financial data requested on this form should be reported in thousands of dollars; for example, an expenditure of $25,342 should be rounded to the nearest thousand dollars and reported as $25.

Where exact data are not available, estimates are acceptable. Your estimates will be better than ours.

Include data for branches and all organizational units of your institution, such as medical schools and agricultural experiment stations. Data on research centers and facilities administered by your institution should be included. In addition, include hospitals or clinics owned, operated, or controlled by universities, and integrated operationally with the clinical programs of your medical schools. **Exclude** data for federally funded research and development centers (FFRDCs). Data for these facilities are collected separately.

Date Submitted_____

Please correct if name or address has changed

If you have any questions please contact Marge Machen of NSF at (202) 634-4673 or Richard Klein of QRC at (301) 657-3070.

Financial data are requested for your institution's 1991 fiscal year.

Please circle the month in which your institution's fiscal year begins:

1	2	3	4	5	6	7	8	9	10	11	12
JAN											DEC

It is estimated that response to this survey will require 19 hours. If you wish to comment on this burden, please contact Herman Fleming at (202) 357-9520.

How many person hours were required to complete this form?_____

Scope:

This survey collects data on expenditures by universities and colleges for separately budgeted research and development (R&D) in science and engineering. Definitions used are compatible with OMB Circular A-21, revised July 23, 1982. Items 1 and 2 ask for *current fund expenditures* by source of funds and by field of science/engineering. Item 3 collects data on that *portion* of *current fund expenditures* reported in items 1 and 2 that went for the purchase of scientific and engineering research equipment.

Definitions:

1. ***Research and Development (R&D).*** R&D for purposes of this survey is the same as "organized research" as defined in Section B.1.b. of OMB Circular A-21 (revised). It includes all R&D activities of an institution that are *separately budgeted and accounted for.* R&D includes both "sponsored research" activities (sponsored by Federal and non-Federal agencies and organizations) and "university research" (separately budgeted under an internal application of institutional funds).

   a. *Research* is a systematic study directed toward fuller knowledge or understanding of the subject studied. Research is classified as either basic or applied, according to the objectives of the investigator.

   b. *Development* is systematic use of the knowledge or understanding gained from research, directed toward the production of useful materials, devices, systems, or methods, including design and development of prototypes and processes.

2. ***Current fund expenditures.*** Expenditures of funds available for current operations. Such expenditures include all unrestricted gifts and restricted current funds to the extent that such funds were expended for current operating purposes

PLEASE TYPE OR PRINT NAME OF PERSON SUBMITTING THIS FORM	TITLE	AREA CODE	EXCH.	NO.	EXT.

NAME OF PERSON WHO PREPARED THIS SUBMISSION (if different from above)	TITLE	AREA CODE	EXCH.	NO.	EXT.

Instructions for Items 1 and 2

Separately budgeted research and development (R&D) includes all funds expended for activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution. *Include* research equipment purchased under research project awards from "current fund" accounts. Also *include* research funds subcontracted to outside organizations. *Exclude* training grants, public service grants, demonstration projects, and departmental research expenditures that are not separately budgeted. Also, *exclude* any R&D expenditures in the fields of education, law, humanities, music, the arts, physical education, library science, and all other non-science fields. Allocate funding to the original sources whenever possible, as specified below. If this information is unknown, report the proximate funding source.

(1) *Total*

a. *Federal Government.* Report grants and contracts for R&D (including direct and reimbursed indirect costs) by all agencies of the Federal Government.

b. *State and local governments.* Include funds for R&D from State, county, municipal, or other local governments and their agencies. Include here State funds which support R&D at agricultural and other experiment stations.

c. *Industry.* Include all grants and contracts for R&D from profitmaking organizations, whether engaged in production, distribution, research, service, or other activities. Do not include grants and contracts from nonprofit foundations financed by industry; these should be reported under *All other sources* (line 1175).

d. *Institution funds.* Report funds, including indirect costs, which your institution spent for R&D activities from the following sources: (1) General-purpose State or local government appropriations (i.e., unrestricted funds); (2) general-purpose grants from industry, foundations, or other outside sources; (3) tuition and fees; (4) endowment income. In addition, estimate your institution's contribution to unreimbursed indirect costs incurred in association with R&D projects financed by outside organizations, and mandatory cost sharing on Federal and other grants. To estimate unreimbursed indirect costs, use your **actual** university **indirect cost rate** (rather than the proposed rate) multiplied by the base (e.g., direct salaries and wages, etc.) minus actual indirect cost recoveries (i.e. Underrecovery = {[Actual Indirect Cost Rate × Research Base (salaries, wages, and direct cost items, but **excluding** indirect cost recoveries)] - Indirect Costs Collected}). If your institution now separately budgets what was previously classified as departmental research, include these data in line 1161.

e. *All other sources.* Include grants for R&D from nonprofit foundations and voluntary health agencies as well as from all other sources not elsewhere classified. Funds from foundations which are affiliated with, or granted solely to your institution, should be included under line 1160, "Institution funds". Funds for R&D received from a health agency that is a unit of a State or local government should be reported under "State and local governments" (line 1125). Also include gifts from individuals that are restricted by the donor to research.

(2) *Basic research.* **Distinguish basic from nonbasic (i.e., applied) research, as defined in column (2) below.**

Instructions for Item 3

Please report that **portion** of current fund expenditures reported in items 1 and 2 that went for the purchase of research equipment. This includes all research equipment purchased under sponsored research project awards from current fund accounts.

From column (1) report current fund expenditures for R&D from all sources: Federal Government, State, county, municipal or other governments and their agencies (including State funds supporting R&D at agricultural experiment stations); industry; institution funds; and private foundations and voluntary health agencies, individuals, and associations.

For column (2) include funds from grants and contracts for R&D sponsored by agencies of the Federal Government.

ITEM 1. CURRENT FUND EXPENDITURES FOR SEPARATELY BUDGETED RESEARCH AND DEVELOPMENT IN THE SCIENCES AND ENGINEERING, BY SOURCE OF FUNDS: FY 1991 (Include indirect costs)

Source of funds		(1) Total (Dollars in thousands)	(2) Basic research (Percent of column 1)
a. Federal Government	1110	$	_____ %
b. State and local governments	1125		**Basic research** is directed toward an increase of knowledge; it is research where the primary aim of the **investigator** is a fuller knowledge or understanding of the subject under study rather than a specific application thereof.
c. Industry	1150		
d. Institution funds	1160		
(1) Separately budgeted	1161		
(2) Underrecovery of indirect costs and cost sharing	1162		
e. All other sources	1175		
f. TOTAL (sum of a through e)	1100	$	_____ %

CONFIDENTIALITY
Information received from individual institutions in lines 1161 and 1162, or estimates for basic research expenditures, will **not** be published or released; only aggregate totals will appear in tabulations.

Note: Total R&D expenditures reported in line 1100, column (1) and line 1400, column (1) should be the same.
Federally financed R&D expenditures reported in line 1110, column (1) and line 1400, column (2) should be the same.

ITEM 2. CURRENT FUND EXPENDITURES (TOTAL AND FEDERALLY FINANCED) FOR SEPARATELY BUDGETED RESEARCH AND DEVELOPMENT, BY FIELD OF SCIENCE/ENGINEERING: FY 1991
(Include indirect costs)*

Field of science/engineering		(Dollars in thousands)	
		(1) Total	(2) Federal
a. ENGINEERING (TOTAL)	1410		
(1) Aeronautical & astronautical	1411		
(2) Chemical	1412		
(3) Civil	1413		
(4) Electrical	1414		
(5) Mechanical	1415		
(6) Metallurgical & materials**	1417		
(7) Other	1416		
b. PHYSICAL SCIENCES (TOTAL)	1420		
(1) Astronomy	1421		
(2) Chemistry	1422		
(3) Physics	1423		
(4) Other	1424		
c. ENVIRONMENTAL SCIENCES (TOTAL)	1430		
(1) Atmospheric	1431		
(2) Earth sciences	1432		
(3) Oceanography	1433		
(4) Other	1434		
d. MATHEMATICAL SCIENCES (TOTAL)	1441		
e. COMPUTER SCIENCES (TOTAL)	1442		
f. LIFE SCIENCES (TOTAL)	1450		
(1) Agricultural	1451		
(2) Biological	1452		
(3) Medical	1453		
(4) Other	1454		
g. PSYCHOLOGY (TOTAL)	1460		
h. SOCIAL SCIENCES (TOTAL)	1470		
(1) Economics	1471		
(2) Political science	1472		
(3) Sociology	1473		
(4) Other	1474		
i. OTHER SCIENCES, not elsewhere classified (TOTAL)	1480		
j. TOTAL (sum of a through i)	1400		

*PLEASE EXCLUDE from your response any R&D expenditures in the fields of education, law, humanities, music, the arts, physical education, library science, and all other non-science/engineering fields.

**In what field(s) have METALLURGICAL AND MATERIALS ENGINEERING data been previously reported? _____

ITEM 3. CURRENT FUND EXPENDITURES FOR RESEARCH EQUIPMENT (TOTAL AND FEDERALLY FINANCED) FOR SEPARATELY BUDGETED RESEARCH AND DEVELOPMENT, BY FIELD OF SCIENCE/ENGINEERING: FY 1991*

Field of science/engineering		(Dollars in thousands)	
		(1) Total	(2) Federal
a. ENGINEERING (TOTAL)	1810		
(1) Aeronautical & astronautical	1811		
(2) Chemical	1812		
(3) Civil	1813		
(4) Electrical	1814		
(5) Mechanical	1815		
(6) Metallurgical & materials**	1817		
(7) Other	1816		
b. PHYSICAL SCIENCES (TOTAL)	1820		
(1) Astronomy	1821		
(2) Chemistry	1822		
(3) Physics	1823		
(4) Other	1824		
c. ENVIRONMENTAL SCIENCES (TOTAL)	1830		
(1) Atmospheric	1831		
(2) Earth sciences	1832		
(3) Oceanography	1833		
(4) Other	1834		
d. MATHEMATICAL SCIENCES (TOTAL)	1841		
e. COMPUTER SCIENCES (TOTAL)	1842		
f. LIFE SCIENCES (TOTAL)	1850		
(1) Agricultural	1851		
(2) Biological	1852		
(3) Medical	1853		
(4) Other	1854		
g. PSYCHOLOGY (TOTAL)	1860		
h. SOCIAL SCIENCES (TOTAL)	1870		
(1) Economics	1871		
(2) Political science	1872		
(3) Sociology	1873		
(4) Other	1874		
i. OTHER SCIENCES, not elsewhere classified (TOTAL)	1880		
j. TOTAL (sum of a through i)	1800		

*Current fund expenditures in each field for scientific research equipment should be a **subset** of the "Total" and "Federal" column reported in item 2.

**In what field(s) have METALLURGICAL AND MATERIALS ENGINEERING data been previously reported? _____

CROSSWALK BETWEEN NSF FIELD OF SCIENCE/ENGINEERING CODES AND THE NATIONAL CENTER FOR EDUCATION STATISTICS (NCES) CLASSIFICATION OF INSTRUCTIONAL PROGRAMS

The left-hand column shows each of the detailed fields as displayed on the questionnaire form. The right-hand column shows the NCES fields which are included within the NSF category as well as some additional illustrative disciplines. These additional displines are intended to be guidelines -- not sharp definitions -- as to what should be reported under a particular field.

Questionnaire Field	NCES Classification and Additional Illustrative Disciplines
a. ENGINEERING	
(1) Aeronautical & Astronautical	14.02 Aerospace (also aerodynamics, space technology)
(2) Chemical	03.0509 Wood Science; 14.07 Chemical Eng.; 14.25 Petroleum Eng. (also petroleum refining process, polymer)
(3) Civil	04.02 Architecture; 14.04 Architectural Eng.; 14.08 Civil Eng. 14.14 Environmental Health Eng. (also hydraulic, hydrologic, sanitary and environmental, structural, transportation)
(4) Electrical	14.09 Computer Eng.; 14.10 Electrical, Electronics & Communications Eng.; 14.1002 Microelectronic Eng. (also power eng.)
(5) Mechanical	14.11 Engineering Mechanics; 14.19 Mechanical Eng.
(6) Metallurgical & Materials	14.06 Ceramic Eng.; 14.15 Geological Eng.; 14.16 Geophysical Eng. 14.18 Materials Eng.; 14.20 Metallurgical Eng.; 14.21 Mining & Mineral Eng. 40.0701 Metallurgy; 14.28 Textile Eng. (also welding)
(7) Other	14.01 Engineering, General; 14.03 Agricultural Eng.; 14.05 Bioengineering & Biomedical Eng. 14.12 Engineering Physics; 14.13 Engineering Science 14.17 Industrial Eng.; 14.22 Naval Architecture & Marine Eng.; 14.23 Nuclear Eng. 14.24 Ocean Eng.; 14.27 Systems Eng. 14.99 Engineering, Other; 30.03 Engineering & Other Disciplines; 30.06 Systems Science (also industrial and management, marine, ocean engineering systems)
b. PHYSICAL SCIENCES	
(1) Astronomy	40.02 Astronomy; 40.03 Astrophysics; 40.09 Planetary Science (also optical and radio, X-ray, Gamma-ray, neutrino)
(2) Chemistry	40.05 Chemistry (also inorganic, organo-metallic, organic, physical, analytical, pharmaceutical, polymer sciences, (except biochemistry))
(3) Physics	40.08 Physics (also acoustics, atomic and molecular, condensed matter, elementary particles, nuclear structure, optics, plasma)
(4) Other	40.01 Physical Sciences, General; 40.0799 Miscellaneous Physical Sciences, Other; 40.99 Physical Sciences, Other (used for multidisciplinary projects within physical sciences and for disciplines not requested separately)
c. ENVIRONMENTAL SCIENCES	
(1) Atmospheric	40.04 Atmospheric Science & Meteorology (also aeronomy, solar, weather modification, extraterrestrial atmospheres)
(2) Earth Sciences	14.26 Surveying & Mapping Sciences; 40.06 Geological Sciences; 40.0703 Earth Science (also engineering geophysics, general geology, geodesy and gravity, geomagnetism, hydrology, inorganic, isotopic, organic geochemistry, lab geophysics, paleomagnetism, paleontology, physical geography and cartography, seismology)
(3) Oceanography	26.0607 Marine Biology; 40.0702 Oceanography (also biological, chemical, geological, or physical oceanography)
(4) Other	(used for multidisciplinary projects within environmental sciences)
d. MATHEMATICAL SCIENCES	06.1302 Operations Research (Quantitative Methods); 27 Mathematics; 27.05 Statistics (also algebra, analysis, applied mathematics, foundations and logic, geometry, numerical analysis, topology)
e. COMPUTER SCIENCES	06.12 Management Information Systems; 11 Computer & Information Science, General; 30.09 Imaging Science (also design, development, and application of computer capabilities to data storage and manipulation, information science)

f. LIFE SCIENCES	
(1) Agricultural	01.03 Agricultural Production 02 Agricultural Sciences 03 Renewable Natural Resources 01.0303 Aquaculture 02.04 Plant Science 04.06 Landscape Architecture 01.07 International Agriculture 02.05 Soil Science (also agricultural chemistry, agronomy, animal science, conservation, fish and wildlife, forestry, horticulture)
(2) Biological	18.0201 Clinical Anatomy 18.0204 Clinical Pathology 18.1002 Allergies & Endomology 18.2202 Epidemiology 26.01 Biology, General 26.0302 Bacteriology 26.0601 Anatomy 26.0604 Embryology 26.0610 Parasitology 26.0701 Zoology 26.0703 Genetics, Human & Animal 26.0706 Physiology, Human & Animal 26.99 Life Sciences, Other 18.0202 Clinical Biochemistry 18.0205 Physiology 18.1009 Immunology 19.05 Food Science & Human Nutrition 26.02 Biochemistry & Biophysics 26.04 Cell & Molecular Biology 26.0602 Biometrics & Biostatistics 26.0606 Histology 26.0612 Toxicology 26.0702 Entomology 26.0704 Pathology, Human & Animal 26.0799 Zoology, Other 42.14 Psychopharmacology 18.0203 Clinical Microbiology 18.0206 Clinical Toxicology 18.1018 Pathology 20.0108 Food & Nutrition 26.03 Botany 26.05 Microbiology 26.0603 Ecology 26.0609 Nutritional Sciences 26.0699 Misc. Specialized Areas/ Life Science/Other 26.0705 Pharmacology, Human & Animal (also biogeography, physical anthropology)
(3) Medical	18.0299 Basic Clinical Health Sciences, Other 18.1004 Colon & Rectal Surgery 18.1008 Geriatrics 18.1012 Nuclear Medicine 18.1015 Orthodontic Surgery 18.1019 Pediatrics 18.1021 Plastic Surgery 18.1023 Psychiatry 18.1026 Surgery 18.1099 Medicine, Other 18.13 Osteopathic Medicine 18.22 Public Health 26.0605 Endocrinology 26.0611 Radiobiology 18.04 Dentistry 18.1001 Medicine, General 18.1005 Dermatology 18.1010 Internal Medicine 18.1013 Obstetrics & Gynecology 18.1016 Orthopedic Surgery 18.1020 Physical Medicine & Rehabilitation 18.1024 Neurology 18.1027 Thoracic Surgery 18.1106 Psychiatry/Mental Health 18.14 Pharmacy 18.24 Veterinary Medicine* 26.0608 Neurosciences 18.06 Hematology 18.1003 Anesthesiology 18.1007 Family Practice 18.1011 Neurological Surgery 18.1014 Ophthalmology 18.1017 Otorhinolaryngology/ Otolaryngology 18.1022 Preventive Medicine 18.1025 Radiology 18.1028 Urology 18.12 Optometry 18.15 Podiatry 20.0102 Child Development Care & Guidance (also cardiology, gastroenterology, preventive medicine and community health, pharmacy, oncology)
(4) Other	17.0807 Occupational Therapy 17.99 Allied Health, Other 18.07 Health Sciences Administration 18.99 Health Sciences, Other 17.0813 Physical Therapy 18.01 Audiology & Speech Pathology 18.09 Medical Laboratory 17.0899 Rehabilitation Services, Other 18.11 Nursing (used for multidisciplinary projects within life sciences)
g. PSYCHOLOGY	13.08 School Psychology 17.0801 Art Therapy 42 Psychology (also animal behavior, clinical, educational, experimental, human development and personality, social)
h. SOCIAL SCIENCES	
(1) Economics	01.0103 Agricultural Economics 06.05 Business Economics 45.06 Economics (also econometrics, international, industrial, labor, public finance and fiscal policy)
(2) Political Science	44.01 Public Affairs, General 44.99 Public Affairs, Other 45.10 Political Science & Government 44.03 International Public Service 44.05 Public Policy Studies 44.04 Public Administration 45.09 International Relations (also regional studies, comparative government, legal systems, political theory)
(3) Sociology	45.02 Anthropology (Social & Cultural only) 45.05 Demography 45.11 Sociology (also comparative and historical, complex organizations, cultural and social structure, group interactions, social problems and welfare theory)
(4) Other	04.03 City, Community & Regional Planning 45.01 Social Sciences, General 45.12 Urban Studies 05 Area & Ethnic Studies 43.01 Criminal Justice 45.03 Archaeology 45.99 Social Sciences, Other 42.12 Psycholinguistics 44.02 Community Services 45.07 Geography (also history of science, linguistics, socioeconomic geography)
i. OTHER SCIENCES, n.e.c.	(used when the multidisciplinary and interdisciplinary aspects make the classification under one primary field impossible)

* Institutions with schools of veterinary medicine should distribute R&D expenditures among the appropriate disciplines (agricultural, biological, and medical) rather than only in medical sciences.

This questionnaire has been printed on recycled paper.